EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1	("20020018997").PN.	US-PGPUB; USPAT; EPO	OR	OFF	2006/03/29 10:51
L2	1	("4257774").PN.	US-PGPUB; USPAT; EPO	OR	OFF	2006/03/29 10:33
L3	83	plurality near5 primary near2 cells	US-PGPUB	OR	OFF	2006/03/29 10:51
L4	43	plurality near3 primary near2 cells	US-PGPUB	OR	OFF	2006/03/29 10:51
L5	39	l4 and @py>"2001"	US-PGPUB	OR	OFF	2006/03/29 11:14
L6	13292	(metal or ion or mercury or lead or zinc) same (nucleic or DNA) same binding	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2006/03/29 11:16
L7	905	(metal or mercury or lead or zinc) same (nucleic or DNA) same binding same fluoresce$	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2006/03/29 11:23
L8	83	(metal or mercury or lead or zinc) same (nucleic or DNA) same binding same fluoresce$ same (dye or bromide)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2006/03/29 11:17
L9	22	l8 and @py<"2002"	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2006/03/29 11:17
L10	60	(heavy adj1 metal) same (nucleic or DNA) same binding same fluoresce$	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2006/03/29 12:00
L11	60	(heavy adj1 metal) same (nucleic or DNA) same binding same fluoresce$	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2006/03/29 11:24
L12	1	("6329145").PN.	USPAT; EPO	OR	OFF	2006/03/29 11:59
L13	4	(heavy adj1 metal) same (nucleic or DNA) same binding same compet$	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2006/03/29 12:03
L14	0	(heavy adj1 metal) same (nucleic or DNA) same compet$ same fluoresce$	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2006/03/29 12:03

EAST Search History

L15	0	(heavy adj1 metal) same (nucleic or DNA) same compet$ same fluores$	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2006/03/29 12:04
L16	101	(heavy adj1 metal) same (nucleic or DNA) same fluores$	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2006/03/29 12:04
L17	7	l16 same (Hg or mercury or copper or chromium or zinc or Zn or Cd or Cu)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2006/03/29 12:05

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	0	Hgcl2 same (nucleic or DNA) same (fluorescence or fluorescent)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2006/03/29 13:23
L2	38	Hg same (nucleic or DNA) same (fluorescence or fluorescent)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2006/03/29 13:54
L3	2	(Hg or mercur$) same quench$ same Dna	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2006/03/29 13:46
L4	0	(Hg or mercur$) same quench$ same toxicant	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2006/03/29 13:46
L5	0	(Hg or mercur$) same quench$ same pollutant	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2006/03/29 13:46
L6	68	(Hg or mercur$) same quench$ same detect$	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2006/03/29 13:46
L7	1	(Hg or mercur$) same quench$ same detect$ same (nucleic or DNA)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2006/03/29 13:46
L10	118	(Hg or mercur$ or Hgcl2) same quench$ same (fluorescence or fluorescent)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2006/03/29 13:57
L11	9	(Hg or mercur$ or Hgcl2) near10 quench$ near3 (fluorescence or fluorescent)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2006/03/29 13:55
L12	2	l10 same (DNA or nucleic)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2006/03/29 13:57

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 NEWS  3  DEC 21   IPC search and display fields enhanced in CA/CAplus with the
                   IPC reform
 NEWS  4  DEC 23   New IPC8 SEARCH, DISPLAY, and SELECT fields in USPATFULL/
                   USPAT2
 NEWS  5  JAN 13   IPC 8 searching in IFIPAT, IFIUDB, and IFICDB
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 NEWS  8  JAN 17   IPC 8 in the WPI family of databases including WPIFV
 NEWS  9  JAN 30   Saved answer limit increased
 NEWS 10  JAN 31   Monthly current-awareness alert (SDI) frequency
                   added to TULSA
 NEWS 11  FEB 21   STN AnaVist, Version 1.1, lets you share your STN AnaVist
                   visualization results
 NEWS 12  FEB 22   Status of current WO (PCT) information on STN
 NEWS 13  FEB 22   The IPC thesaurus added to additional patent databases on STN
 NEWS 14  FEB 22   Updates in EPFULL; IPC 8 enhancements added
 NEWS 15  FEB 27   New STN AnaVist pricing effective March 1, 2006
 NEWS 16  FEB 28   MEDLINE/LMEDLINE reload improves functionality
 NEWS 17  FEB 28   TOXCENTER reloaded with enhancements
 NEWS 18  FEB 28   REGISTRY/ZREGISTRY enhanced with more experimental spectral
                   property data
 NEWS 19  MAR 01   INSPEC reloaded and enhanced
 NEWS 20  MAR 03   Updates in PATDPA; addition of IPC 8 data without attributes
 NEWS 21  MAR 08   X.25 communication option no longer available after June 2006
 NEWS 22  MAR 22   EMBASE is now updated on a daily basis

 NEWS EXPRESS  FEBRUARY 15 CURRENT VERSION FOR WINDOWS IS V8.01a,
               CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
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               V8.0 AND V8.01 USERS CAN OBTAIN THE UPGRADE TO V8.01a AT
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=> (heavy metal) and pollutant and DNA and (fluorescence or fluorescent)
L1            0 FILE AGRICOLA
L2            1 FILE BIOTECHNO
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L4            0 FILE HEALSAFE
L5            0 FILE IMSDRUGCONF
L6            1 FILE LIFESCI
L7            5 FILE PASCAL

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L8            7 (HEAVY METAL) AND POLLUTANT AND DNA AND (FLUORESCENCE OR FLUORES
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L9    ANSWER 1 OF 7  PASCAL  COPYRIGHT 2006 INIST-CNRS. ALL RIGHTS RESERVED. on
      STN
ACCESSION NUMBER:         2004-0005196   PASCAL
COPYRIGHT NOTICE:         Copyright .COPYRGT. 2004 INIST-CNRS. All rights
                          reserved.
TITLE (IN ENGLISH):       A DNA expression array to detect toxic
                          stress response in European flounder (Platichthys
```

flesus)
AUTHOR: WILLIAMS T. D.; GENSBERG K.; MINCHIN S. D.; CHIPMAN J. K.
CORPORATE SOURCE: School of Biosciences, The University of Birmingham, Edgbaston, Birmingham B15 2TT, United Kingdom
SOURCE: Aquatic toxicology, (2003), 65(2), 141-157, refs. 2 p.3/4
ISSN: 0166-445X CODEN: AQTODG
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: Netherlands
LANGUAGE: English
AVAILABILITY: INIST-18841, 354000112891060020
AN 2004-0005196 PASCAL

AB As a first stage in developing a **DNA** array-based approach to investigating the effects of **pollutants** on an environmentally relevant European fish species, we have constructed a 160-gene custom microarray for European flounder, Degenerate primers were used to amplify 110 different fragments of stress-related and other genes from European flounder cDNA and genomic **DNA**. Additionally, 22 fragments were obtained by suppressive subtractive hybridisation (SSH). These fragments were cloned and sequenced, then, with additional control genes, used to create a cDNA microarray for flounder. After optimisation of the arraying process, hepatic mRNA was isolated from flounder caught in the polluted Tyne and relatively unpolluted Aide estuaries. **Fluorescent** cDNA probes were synthesised from the mRNA and used in dual-colour hybridisations to the microarray. A number of transcripts were differentially expressed between Tyne and Aide female flounder but these changes were not significant, due to high inter-individual variation. However, in comparisons between Tyne and Aide male flounder, 11 transcripts were found to significantly differ in expression ($P < 0.05$). Seven transcripts were more highly expressed in the Tyne male fish (CYP1A, UDPGT, α-2HS-glycoprotein, dihydropyrimidine dehydrogenase, Cu/Zn SOD, aldehyde dehydrogenase and paraoxonase). Four transcripts (Elongation factor 1 (EF1), EF2, Int-6 and complement component C3) were found to be significantly less abundant in the Tyne male fish. Selected genes were assayed by real-time PCR, then normalised to α-tubulin. These assays confirmed the significance of the array results for CYP1A, UDPGT and EF1, but not for Cu/Zn SOD. This study provides a link between traditional single-gene biomarker studies and the emerging field of eco-toxicogenomics; demonstrating the utility of microarray studies on environmentally sampled, non-model organisms.

L9 ANSWER 2 OF 7 LIFESCI COPYRIGHT 2006 CSA on STN
ACCESSION NUMBER: 2004:8736 LIFESCI
TITLE: Metabolic interactions between low doses of benzo[a]pyrene and tributyltin in arctic charr (salvelinus alpinus): a long-term in vivo study
AUTHOR: Padros, J.; Pelletier, E.*; Ribeiro, C.O.
CORPORATE SOURCE: Institut des sciences de la mer de Rimouski, Universitedu Quebec aRimouski, 310 allee des Ursulines, Rimouski, Quebec, Canada G5L 3A1; E-mail: emilien.pelletier@uqar.qc.ca
SOURCE: Toxicology and Applied Pharmacology [Toxicol. Appl. Pharmacol.], (20031001) vol. 192, no. 1, pp. 45-55. ISSN: 0041-008X.
DOCUMENT TYPE: Journal
FILE SEGMENT: X
LANGUAGE: English
SUMMARY LANGUAGE: English
AB We have previously reported that short-term, single exposure to a high dose of tributyltin (TBT), a widely used antifouling biocide, inhibited both the in vivo metabolism and metabolic activation of the carcinogenic polycyclic aromatic hydrocarbon benzo[a]pyrene (BaP) in fish; (BaP), in turn, stimulated TBT metabolism. Here, we provide further mechanistic evidence of mutual metabolic interactions between BaP and TBT in response to long-term, repeated exposures to low doses. Juvenile Arctic charr (Salvelinus alpinus) received 10 separate ip injections (a single

injection every 6 days) of BaP (3 mg/kg), TBT (0.3 mg/kg), or both in combination; control fish received corn oil vehicle only. Two days after the 2 super(nd) (Day 8), 6 super(th) (Day 32), and 10 super(th) dose (Day 56), blood, bile, and liver samples were collected and analyzed for a suite of biomarkers. HPLC/**fluorescence** analysis indicated that TBT cotreatment inhibited the formation of (+)-anti-BaP diol-epoxide adducts with plasma albumin (53%, Day 8), hepatic **DNA** (27%, Day 32), or both albumin and globin (50 and 58%, Day 56) compared to BaP alone. This antagonistic interaction was associated with a time-dependent modulation (inhibition at Day 8, enhancement at Day 32) of both cytochrome P450 (P450)1A-mediated ethoxyresorufin O-deethylase (EROD) activity and biliary BaP metabolite formation. TBT cotreatment also inhibited (39%) the BaP-mediated induction of hepatic glutathione S-transferase (GST) activity observed at Day 8. Treatment with TBT alone increased EROD activity (60%) at Day 32, but decreased both GST activity (70 and 37%) and glutathione content (24% and 16%) at Days 32 and 56, respectively. GC/MS analysis revealed that, at Day 56, BaP cotreatment increased (200%) the levels of biliary butyltin compounds, including mono- and dibutyltin metabolites. This potentiative interaction was associated with a protective effect of BaP cotreatment against the TBT-mediated decreases in GST activity and glutathione content. The current results demonstrate that, whereas TBT inhibited BaP bioactivation via a time-dependent modulation of P4501A induction, BaP stimulated the Phase II metabolism of TBT and/or its biliary excretion. The mutual metabolic interactions between these two widespread aquatic **pollutants** reinforce the need for long-term in vivo interactive studies at low doses.

L9 ANSWER 3 OF 7 PASCAL COPYRIGHT 2006 INIST-CNRS. ALL RIGHTS RESERVED. on STN

ACCESSION NUMBER: 2001-0229693 PASCAL
COPYRIGHT NOTICE: Copyright .COPYRGT. 2001 INIST-CNRS. All rights reserved.
TITLE (IN ENGLISH): Toxic effects of chromium acetate hydroxide on cells cultivated in vitro
AUTHOR: RUDOLF Emil; PEYCHL Jan; CERVINKA Miroslav
CORPORATE SOURCE: Department of Medical Biology and Genetics, Charles University in Prague, Faculty of Medicine in Hradec Kralove, Simkova 870, Hradec Kralove I 500, Czech Republic
SOURCE: ATLA. Alternatives to laboratory animals, (2001), 29(2), 163-177, 20 refs.
ISSN: 0261-1929
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: United Kingdom
LANGUAGE: English
AVAILABILITY: INIST-22450, 354000095048960050
AN 2001-0229693 PASCAL
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AB Many human activities, particularly industrial ones, result in an ever-growing production of toxic waste materials. The dynamics of the toxic effects of chromium acetate hydroxide, which is found in high concentrations in a waste sediment produced in the Czech Republic, were assessed by using a battery of in vitro tests carried out on two cell lines: L-929 (mouse fibroblasts) and Hep 2 (human laryngeal cells). Various markers of cell damage were assessed by phase-contrast, video and **fluorescence** microscopy, fluorometry, and **DNA** analysis. Chromium acetate hydroxide, over a concentration range of 1-0.02mol/l induced immediate cell death by fixation, whereas, at 0.002mol/l, the treated cells died in a much slower, more discrete manner. All the detected markers of cell damage, whether immediate or slow, clearly demonstrated that the cells died by necrosis. On the other hand, test concentration of 0.001mol/l appeared to constitute a threshold at which no pathological changes of Hep 2 cells were observed over 96 hours. We conclude that chromium acetate hydroxide has a high toxic potential in vitro, which should be considered when studying the toxicity of waste materials containing it.

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STN

ACCESSION NUMBER: 2002-0125591 PASCAL

TITLE (IN ENGLISH): In vitro suppression of thymocyte apoptosis by metal-rich complex environmental mixtures: potential role of zinc and cadmium excess

AUTHOR: CHUKHLOVIN Alexei B.; TOKALOV Sergei V.; YAGUNOV Alexei S.; WESTENDORF Johannes; REINCKE Heinrich; KARBE Ludwig

CORPORATE SOURCE: Center of Hematology, St. Petersburg State Medical University, 6/8 L. Tolstoy St., St. Petersburg 187022, Russian Federation; Central Research Institute of Roentgenology and Radiology, Pesochny-2, 189646, St. Petersburg, Russian Federation; Institute of Experimental and Clinical Pharmacology and Toxicology, University of Hamburg, Vogt-Koelln ST. 30, 22527, Hamburg, Germany, Federal Republic of; Elbe River Water Quality Board, Nessdeich 120-121, 21129, Hamburg, Germany, Federal Republic of; Institute of Hydrobiology and Fisheries Science, University of Hamburg, Zeiseweg 9, 22765, Hamburg, Germany, Federal Republic of

SOURCE: Science of the total environment, (2001), 281(1-3), 153-163, refs. 1 p.1/4
ISSN: 0048-9697 CODEN: STENDL

DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: Ireland
LANGUAGE: English
AVAILABILITY: INIST-15662, 354000103409260120

AN 2002-0125591 PASCAL

AB Excessive amounts of **heavy metals** (e.g. Zn, Cu, Mn, Cr) are accumulated in river bottom sediments (RBS), being available to humans and animals along food chains. Increased exposure of mammals to certain metals (Cr, Cu) induces immunosuppresion, due to **DNA** damage and decreased survival of lymphoid cells. By contrast, excess of Zn and Cd causes inhibition of apoptosis thus suggesting increased survival of genetically mutated cells and higher cancer risks in exposed populations. Rat thymic lymphocytes represent a well-established model for apoptosis testing. The primary goal of our study was to assess the degree of apoptosis modulation with a number of RBS extracts differing in their metal contents. A series of freshly deposited RBS was collected at nine sampling stations along the Elbe River. All sediments were rich in Fe, Mn and Zn. The contents of Cu, Cr, Ni, Cd, Hg. Pb and As were much lower and interrelated. The short-term cytotoxicity of aqueous sediment extracts was assessed, using the following criteria: total cell counts; incidence of apoptosis and necrosis (morphological detection by **fluorescent** microscopy); and nuclear chromatin decay (by **DNA** flow cytometry). RBS extracts produced both apoptosis and necrosis of thymocytes. High contents of zinc and other **heavy metals** in the samples correlated with decreased thymocyte apoptosis ($r = -0.543$ to -0.608, $P<0.01$). The rates of thymocyte damage showed a distinct dependence on the time and region of sampling. Apoptosis modulation was also tested with pure salts of Mn(II), Zn(II), Cu(II), Cr(III) and Cd(II), at the test concentrations of 1. 10 and 100 μM. Cu(II) and Cr(III) proved to induce marked dose-related apoptosis whereas Zn(II) ions caused significant suppression of apoptosis. These effects were similar to those trends observed with metal-rich sediments. In the present study. **DNA** flow cytometry proved to be a less sensitive index of cell death than morphological assay of apoptosis and/or necrosis. In summary, inhibition of lymphocyte apoptosis by RBS extracts and pure metals is associated with excess of zinc and, probably, cadmium. The proposed model of lymphoid cell apoptosis is a promising tool for screening cytotoxic effects of complex environmental samples.

ACCESSION NUMBER: 2002-0131007 PASCAL
COPYRIGHT NOTICE: Copyright .COPYRGT. 2002 INIST-CNRS. All rights reserved.
TITLE (IN ENGLISH): Current bioremediation practice and perspective
AUTHOR: IWAMOTO Tomotada; NASU Masao
CORPORATE SOURCE: Department of Bacteriology, Kobe Institute of Health, 4-6 Minatojima-nakamachi, Chuo-ku, Kobe 650-0046, Japan; Environmental Science and Microbiology, Graduate School of Pharmaceutical Sciences, Osaka University, 1-6 Yamada-oka, Suita, Osaka 565-0871, Japan
SOURCE: Journal of bioscience and bioengineering, (2001), 92(1), 1-8, 83 refs.
ISSN: 1389-1723
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: Japan
LANGUAGE: English
AVAILABILITY: INIST-8234, 354000096051070010
AN 2002-0131007 PASCAL
CP Copyright .COPYRGT. 2002 INIST-CNRS. All rights reserved.
AB The use of microbes to clean up polluted environments, bioremediation, is a rapidly changing and expanding area of environmental biotechnology. Although bioremediation is a promising approach to improve environmental conditions, our limited understanding of biological contribution to the effect of bioremediation and its impact on the ecosystem has been an obstacle to make the technology more reliable and safer. Providing fundamental data to resolve these issues, i.e., the behavior of the target bacteria directly related to the degradation of contaminants and the changes in microbial communities during bioremediation, has been a challenge for microbiologists since many environmental bacteria cannot yet be cultivated by conventional laboratory techniques. The application of culture-independent molecular biological techniques offers new opportunities to better understand the dynamics of microbial communities. **Fluorescence** in situ hybridization (FISH), in situ PCR, and quantitative PCR are expected to be powerful tools for bioremediation to detect and enumerate the target bacteria that are directly related to the degradation of contaminants. Nucleic acid based molecular techniques for fingerprinting the 16S ribosomal **DNA** (rDNA) of bacterial cells, i.e., denaturing gradient gel electrophoresis (DGGE) and terminal restriction fragment length polymorphism (T-RFLP), enable us to monitor the changes in bacterial community in detail. Such advanced molecular microbiological techniques will provide new insights into bioremediation in terms of process optimization, validation, and the impact on the ecosystem, which are indispensable data to make the technology reliable and safe.

L9 ANSWER 6 OF 7 BIOTECHNO COPYRIGHT 2006 Elsevier Science B.V. on STN
ACCESSION NUMBER: 2000:30944926 BIOTECHNO
TITLE: Transgenic zebrafish as sentinels for aquatic pollution
AUTHOR: Carvan III M.J.; Dalton T.P.; Stuart G.W.; Nebert D.W.
CORPORATE SOURCE: D.W. Nebert, Department of Environmental Health, Univ. of Cincinnati Medical Center, P.O. Box 670056, Cincinnati, OH 45267-0056, United States.
E-mail: dan.nebert@uc.edu
SOURCE: Annals of the New York Academy of Sciences, (2000), 919/- (133-147), 56 reference(s)
CODEN: ANYAA0 ISSN: 0077-8923
DOCUMENT TYPE: Journal; Conference Article
COUNTRY: United States
LANGUAGE: English
SUMMARY LANGUAGE: English
AN 2000:30944926 BIOTECHNO
AB Using the golden mutant zebrafish having a decrease in interfering pigmentation, we are developing transgenic lines in which **DNA** motifs that respond to selected environmental **pollutants** are capable of activating a reporter gene that can be easily assayed. We have begun with three response elements that recognize three important classes

of foreign chemicals. Aromatic hydrocarbon response elements (AHREs) respond to numerous polycyclic hydrocarbons and halogenated coplanar molecules such as 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD; dioxin) and polychlorinated biphenyls. Electrophile response elements (EPREs) respond to quinones and numerous other potent electrophilic oxidants. Metal response elements (MREs) respond to **heavy metal** cations such as mercury, copper, nickel, cadmium, and zinc. Soon, we will include estrogen response elements (EREs) to detect the effects of environmental endocrine disruptors, and retinoic acid response elements (RARE, RXRE) to detect the effects of retinoids in the environment. Each of these substances is known to be bioconcentrated in fish to varying degrees; for example, 10.sup.-.sup.1.sup.7 M TCDD in a body of water becomes concentrated to approximately 10.sup.-.sup.1.sup.2 M TCDD in a fish, where it would act upon the AHRE motif and turn on the luciferase (LUC) reporter gene. The living fish as a sentinel will not only be assayed intact in the luminometer, but - upon several days or weeks of depuration - would be usable again. To date, we have established that zebrafish transcription factors are able to recognize both mammalian and trout AHRE, EPRE, and MRE sequences in a dose-dependent and chemical-class-specific manner, and that expression of both the LUC and jellyfish green **fluorescent** protein (GFP) reporter genes is easily detected in zebrafish cell cultures and in the intact live zebrafish. Variations in sensitivity of this model system can be achieved by increasing the copy number of response elements and perhaps by altering the sequence of each core consensus response element and flanking regions. This transgenic technology should allow for a simple, exquisitely sensitive, and inexpensive assay for monitoring aquatic pollution. We have already initiated studies using sentinel zebrafish to monitor a public drinking water source.

L9 ANSWER 7 OF 7 PASCAL COPYRIGHT 2006 INIST-CNRS. ALL RIGHTS RESERVED. on STN

ACCESSION NUMBER:	1998-0538295 PASCAL
COPYRIGHT NOTICE:	Copyright .COPYRGT. 1998 Elsevier Science B.V. All rights reserved.
TITLE (IN ENGLISH):	Disruption of microtubule assembly and spindle formation as a mechanism for the induction of aneuploid cells by sodium arsenite and vanadium pentoxide
AUTHOR:	RAMREZ P.; EASTMOND D. A.; LACLETTE J. P.; OSTROSKY WEGMAN P.
CORPORATE SOURCE:	04510 Mexico, DF, Mexico; 04510 Mexico, DF, Mexico; Riverside, CA 92521, United States
SOURCE:	Mutation research. Reviews in mutation research, (1997), 386(3), 291-298 ISSN: 1383-5742
DOCUMENT TYPE:	Journal
BIBLIOGRAPHIC LEVEL:	Analytic
COUNTRY:	Netherlands
LANGUAGE:	English
SUMMARY LANGUAGE:	English
AVAILABILITY:	INIST-12206F, 354000071625070020

AN 1998-0538295 PASCAL

AB Copyright (c) 1997 Elsevier Science B.V. All rights reserved. Arsenic and vanadium are important environmental and industrial **pollutants**. Due to their widespread occurrence and potential genotoxicity, we studied the aneuploidy-inducing effects of these elements in cultured human lymphocytes using a variety of techniques including **fluorescence** in situ hybridization (FISH) with **DNA** probes for chromosomes 1 and 7, immunostaining of the lymphocyte spindle apparatus, and an in vitro assay measuring the polymerization and depolymerization of tubulin. Dose-related increases in hyperdiploidy were seen in lymphocyte cultures treated with sodium arsenite (NaAsO.sub.2) or vanadium pentoxide (V.sub.2O.sub.5) over concentrations ranging from 0.001 to 0.1 μM. NaAsO.sub.2-treated cells from different donors exhibited similar hyperdiploid frequencies, whereas substantial inter-individual variability was seen in the V.sub.2O.sub.5-treated cells. Examination of the spindle apparatus using

an anti-&bgr;-tubulin antibody indicated that these compounds might disrupt spindle formation by interacting with microtubules. Additional in vitro assays using purified tubulin indicated that both compounds inhibited microtubule assembly and induced tubulin depolymerization. These results indicate that in vitro exposure to both NaAsO.sub.2 and V.sub.2O.sub.5 can induce aneuploidy in human lymphocytes, and that this effect may occur through a disruption of microtubule function.

=> (DNA or nucleic)(12A)(mercury or cd or Hg or pb or cu or copper)(fluorescence or fluorescent)
MISSING OPERATOR COPPER)(FLUORESCEN
The search profile that was entered contains terms or
nested terms that are not separated by a logical operator.

=> (DNA or nucleic)(12A)(mercury or cd or Hg or pb or cu or copper)(10A)(fluorescence or fluorescent)
L10 6 FILE AGRICOLA
L11 35 FILE BIOTECHNO
L12 0 FILE CONFSCI
L13 0 FILE HEALSAFE
L14 0 FILE IMSDRUGCONF
L15 26 FILE LIFESCI
L16 21 FILE PASCAL

TOTAL FOR ALL FILES
L17 88 (DNA OR NUCLEIC)(12A)(MERCURY OR CD OR HG OR PB OR CU OR COPPER)(10A)(FLUORESCENCE OR FLUORESCENT)

=> l77 and (dissociate or dissociation)
L77 NOT FOUND
The L-number entered could not be found. To see the definition of L-numbers, enter DISPLAY HISTORY at an arrow prompt (=>).

=> l17 and (dissociate or dissociation)
L18 0 FILE AGRICOLA
L19 3 FILE BIOTECHNO
L20 0 FILE CONFSCI
L21 0 FILE HEALSAFE
L22 0 FILE IMSDRUGCONF
L23 0 FILE LIFESCI
L24 0 FILE PASCAL

TOTAL FOR ALL FILES
L25 3 L17 AND (DISSOCIATE OR DISSOCIATION)

=> dup rem
ENTER L# LIST OR (END):l25
DUPLICATE IS NOT AVAILABLE IN 'IMSDRUGCONF'.
ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIQUE
PROCESSING COMPLETED FOR L25
L26 2 DUP REM L25 (1 DUPLICATE REMOVED)

=> d l26 ibib abs total

L26 ANSWER 1 OF 2 BIOTECHNO COPYRIGHT 2006 Elsevier Science B.V. on STN
DUPLICATE
ACCESSION NUMBER: 2001:32249450 BIOTECHNO
TITLE: Caffeine **dissociates** complexes between DNA and intercalating dyes: Application for bleaching fluorochrome-stained cells for their subsequent restaining and analysis by laser scanning cytometry
AUTHOR: Bedner E.; Du L.; Traganos F.; Darzynkiewicz Z.
CORPORATE SOURCE: Dr. Z. Darzynkiewicz, Brander Cancel Research Institute, New York Medical College, 19 Bradhurst Avenue, Hawthorne, NY 10523, United States. E-mail: darzynk@nymc.edu
SOURCE: Cytometry, (01 JAN 2001), 43/1 (38-45), 26 reference(s)
CODEN: CYTODQ ISSN: 0196-4763

DOCUMENT TYPE: Journal; Article
COUNTRY: United States
LANGUAGE: English
SUMMARY LANGUAGE: English
AN 2001:32249450 BIOTECHNO
AB Background: Removal of the nucleic acid-bound fluorochrome is desirable when stained cells have to be reanalyzed using other fluorochromes. It is also often desirable to remove DNA-bound antitumor drugs from drug-treated cells, to improve cell staining. We have previously observed that in aqueous solutions, the methylxanthine caffeine (CFN) decreases interactions between planar aromatic molecules such as intercalating dyes or antitumor drugs and nucleic acids. The aim of this study was to explore whether this property of CFN can be utilized to remove the DNA-bound intercalating dyes propidium iodide (PI) or 7-aminoactinomycin D (7-AAD) from the cells and whether the bleached cells can be restained and reanalyzed. Methods: HL-60 cells were fixed in 70% ethanol and their DNA was stained with PI or 7-AAD. The cells were then rinsed with a 0.05 M solution of CFN in phosphate-buffered saline (PBS) or with PBS alone. The decrease in intensity of cell fluorescence during rinsing was measured by laser scanning cytometry (LSC) to obtain the bleaching kinetics of individual cells. The bleached cells were then restained with PI, 7-AAD, or the protein-specific fluorochrome sulforhodamine 101(S101). Their fluorescence was measured again by LSC. In addition, free DNA was subjected to gel electrophoresis, DNA bands in the gels were stained with ethidium bromide (EB), and the gels were rinsed with a solution of CFN or **PBS** to bleach the **DNA** band's **fluorescence**.
Results: Rinsing the PI or 7-AAD-stained cells with solutions of CFN led to nearly complete removal of PI and a more than 75% decrease in 7-AAD fluorescence after 10 min. The rinse with PBS decreased the PI cell fluorescence intensity by less than 30% and the 7-AAD fluorescence by about 50%. The differences in kinetics of PI or 7-AAD removal by CFN from G.sub.2/M versus G.sub.1 cells suggest that these intercalators bind more strongly to DNA in chromatin of G.sub.2/M than G.sub.1 cells. The CFN-bleached cells were then successfully stained with S101 and again with PI or 7-AAD. The bivariate analysis of the LSC merged files of the cells sequentially stained with PI and S101 revealed typical DNA/protein distributions. The fluorescence of EB-stained DNA bands in gels was also nearly completely removed by rinsing gels in 0.05 M CFN; PBS alone had a distinctly lesser effect. Conclusion: Solutions of CFN can **dissociate** the DNA-bound PI, 7-AAD, EB, and possibly other intercalating fluorochromes. The bleached cells can be restained and reanalyzed by LSC. This approach can also be used to remove such fluorochromes from nucleic acids immobilized in gels and perhaps in other solid matrices. Analysis of the kinetics of fluorochrome removal from cells can possibly be used to study their binding affinities to nucleic acids in situ. .COPYRGT. 2001 Wiley-Liss, Inc.

L26 ANSWER 2 OF 2 BIOTECHNO COPYRIGHT 2006 Elsevier Science B.V. on STN
ACCESSION NUMBER: 1996:26054287 BIOTECHNO
TITLE: Equilibrium **dissociation** and unfolding of the dimeric human papillomavirus strain-16 E2 DNA-binding domain
AUTHOR: Mok Y.-K.; De Prat Gay G.; Butler P.J.; Bycroft M.
CORPORATE SOURCE: MRC Unit for Protein Function/Design, Department of Chemistry, University of Cambridge, Lensfield Road,Cambridge CB2 1EW, United Kingdom.
SOURCE: Protein Science, (1996), 5/2 (310-319)
CODEN: PRCIEI ISSN: 0961-8368
DOCUMENT TYPE: Journal; Article
COUNTRY: United States
LANGUAGE: English
SUMMARY LANGUAGE: English
AN 1996:26054287 BIOTECHNO
AB The equilibrium unfolding reaction of the C-terminal 80-amino-acid dimeric DNA-binding domain of human papillomavirus (HPV) strain 16 E2 protein has been investigated using **fluorescence**, far-UV **CD**, and equilibrium sedimentation. The stability of the HPV-16 E2 **DNA**-binding domain is concentration-dependent, and the unfolding reaction is well described as a two-state transition from folded dimer to

unfolded monomer. The conformational stability of the protein, ΔG(H.sub.20), was found to be 9.8 kcal/mol at pH 5.6, with the corresponding equilibrium unfolding/**dissociation** constant, K(u), being 6.5 x 10.sup.-.sup.8 M. Equilibrium sedimentation experiments give a K(d) of 3.0 x 10.sup.-.sup.8 M, showing an excellent agreement between the two different techniques. Denaturation by temperature followed by the change in ellipticity also shows a concomitant disappearance of secondary and tertiary structures. The K(u) changes dramatically at physiologically relevant pH's: with a change in pH from 6.1 to 7.0, it goes from 5.5 x 10.sup.-.sup.8 M to 4.4 x 10.sup.1.sup.0 M. Our results suggest that, at the very low concentration of protein where DNA binding is normally measured (e.g., 10.sup.-.sup.1.sup.1 M), the protein is predominantly monomeric and unfolded. They also stress the importance of the coupling between folding and DNA binding.

```
=> (toxicity or toxicant) and (heavy metal) and (fluorescence or fluorescent)
L27          10 FILE AGRICOLA
L28          17 FILE BIOTECHNO
L29           0 FILE CONFSCI
L30          10 FILE HEALSAFE
L31           0 FILE IMSDRUGCONF
L32          68 FILE LIFESCI
L33         253 FILE PASCAL

TOTAL FOR ALL FILES
L34         358 (TOXICITY OR TOXICANT) AND (HEAVY METAL) AND (FLUORESCENCE OR
                FLUORESCENT)

=> l34 and (DNA or nucleic)
L35           0 FILE AGRICOLA
L36           4 FILE BIOTECHNO
L37           0 FILE CONFSCI
L38           1 FILE HEALSAFE
L39           0 FILE IMSDRUGCONF
L40           6 FILE LIFESCI
L41          22 FILE PASCAL

TOTAL FOR ALL FILES
L42          33 L34 AND (DNA OR NUCLEIC)

=> dup rem
ENTER L# LIST OR (END):l42
DUPLICATE IS NOT AVAILABLE IN 'IMSDRUGCONF'.
ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIQUE
PROCESSING COMPLETED FOR L42
L43          29 DUP REM L42 (4 DUPLICATES REMOVED)

=> l43 and py<2001
L44           0 S L43
L45           0 FILE AGRICOLA
L46           4 S L43
L47           1 FILE BIOTECHNO
L48           0 S L43
'2001' NOT A VALID FIELD CODE
L49           0 FILE CONFSCI
L50           1 S L43
L51           0 FILE HEALSAFE
L52           0 S L43
L53           0 FILE IMSDRUGCONF
L54           4 S L43
L55           3 FILE LIFESCI
L56          20 S L43
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NEWS 4 DEC 23 New IPC8 SEARCH, DISPLAY, and SELECT fields in USPATFULL/ USPAT2
NEWS 5 JAN 13 IPC 8 searching in IFIPAT, IFIUDB, and IFICDB
NEWS 6 JAN 13 New IPC 8 SEARCH, DISPLAY, and SELECT enhancements added to INPADOC
NEWS 7 JAN 17 Pre-1988 INPI data added to MARPAT
NEWS 8 JAN 17 IPC 8 in the WPI family of databases including WPIFV
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NEWS 15 FEB 27 New STN AnaVist pricing effective March 1, 2006
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NEWS 20 MAR 03 Updates in PATDPA; addition of IPC 8 data without attributes
NEWS 21 MAR 08 X.25 communication option no longer available after June 2006
NEWS 22 MAR 22 EMBASE is now updated on a daily basis

NEWS EXPRESS FEBRUARY 15 CURRENT VERSION FOR WINDOWS IS V8.01a,
CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
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=> file .meeting
'EVENTLINE' IS NOT A VALID FILE NAME
Enter "HELP FILE NAMES" at an arrow prompt (=>) for a list of files that are available. If you have requested multiple files, you can specify a corrected file name or you can enter "IGNORE" to continue accessing the remaining file names entered.
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ENTER A FILE NAME OR (IGNORE):ignore

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=> (heavy metal) and pollutant and DNA and (fluorescence or fluorescent)
L1 0 FILE AGRICOLA
L2 1 FILE BIOTECHNO
L3 0 FILE CONFSCI
L4 0 FILE HEALSAFE
L5 0 FILE IMSDRUGCONF
L6 1 FILE LIFESCI
L7 5 FILE PASCAL

TOTAL FOR ALL FILES
L8 7 (HEAVY METAL) AND POLLUTANT AND DNA AND
(FLUORESCENCE OR FLUORES
CENT)

=> dup rem
ENTER L# LIST OR (END):l8
DUPLICATE IS NOT AVAILABLE IN 'IMSDRUGCONF'.
ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIQUE
PROCESSING COMPLETED FOR L8
L9 7 DUP REM L8 (0 DUPLICATES REMOVED)

=> d l9 ibib abs total

L9 ANSWER 1 OF 7 PASCAL COPYRIGHT 2006 INIST-CNRS. ALL RIGHTS
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ACCESSION NUMBER: 2004-0005196 PASCAL
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TITLE (IN ENGLISH): A DNA expression array to detect toxic stress response in European flounder (Platichthys flesus)
AUTHOR: WILLIAMS T. D.; GENSBERG K.; MINCHIN S. D.; CHIPMAN J. K.
CORPORATE SOURCE: School of Biosciences, The University of Birmingham, Edgbaston, Birmingham B15 2TT, United Kingdom
SOURCE: Aquatic toxicology, (2003), 65(2), 141-157, refs. 2 p.3/4
ISSN: 0166-445X CODEN: AQTODG
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: Netherlands
LANGUAGE: English
AVAILABILITY: INIST-18841, 354000112891060020
AN 2004-0005196 PASCAL

AB As a first stage in developing a DNA array-based approach to investigating the effects of pollutants on an environmentally relevant European fish species, we have constructed a 160-gene custom microarray for European flounder, Degenerate primers were used to amplify 110 different fragments of stress-related and other genes from European flounder cDNA and genomic DNA. Additionally, 22 fragments were obtained by suppressive subtractive hybridisation (SSH). These fragments were cloned and sequenced, then, with additional control genes, used to create a cDNA microarray for flounder. After optimisation of the arraying process, hepatic mRNA was isolated from flounder caught in the polluted Tyne and relatively unpolluted Aide estuaries. Fluorescent cDNA probes were synthesised from the mRNA and used in dual-colour hybridisations to the microarray. A number of transcripts were differentially expressed between Tyne and Aide female flounder but these changes were not significant, due to high inter-individual variation. However, in comparisons between Tyne and Aide male flounder, 11 transcripts were found to significantly differ in expression ($P < 0.05$). Seven transcripts were more highly expressed in the Tyne male fish (CYP1A, UDPGT, .alpha.-2HS-glycoprotein, dihydropyrimidine dehydrogenase, Cu/Zn SOD, aldehyde dehydrogenase and paraoxonase). Four transcripts (Elongation factor 1 (EF1), EF2, Int-6 and complement component C3) were found to be significantly less abundant in the Tyne male fish. Selected genes were assayed by real-time PCR, then normalised to .alpha.-tubulin. These assays confirmed the significance of the array results for CYP1A, UDPGT and EF1, but not for Cu/Zn SOD. This study provides a link between traditional single-gene biomarker studies and the emerging field of eco-toxicogenomics, demonstrating the utility of microarray studies on

environmentally sampled, non-model organisms.

L9 ANSWER 2 OF 7 LIFESCI COPYRIGHT 2006 CSA on STN
ACCESSION NUMBER: 2004:8736 LIFESCI
TITLE: Metabolic interactions between low doses of benzo[a]pyrene and tributyltin in arctic charr (salvelinus alpinus): a long-term in vivo study
AUTHOR: Padros, J.; Pelletier, E.*; Ribeiro, C.O.
CORPORATE SOURCE: Institut des sciences de la mer de Rimouski, Universitedu Quebec aRimouski, 310 allee des Ursulines, Rimouski, Quebec, Canada G5L 3A1; E-mail: emilien.pelletier@uqar.qc.ca
SOURCE: Toxicology and Applied Pharmacology [Toxicol. Appl. Pharmacol.], (20031001) vol. 192, no. 1, pp. 45-55. ISSN: 0041-008X.
DOCUMENT TYPE: Journal
FILE SEGMENT: X
LANGUAGE: English
SUMMARY LANGUAGE: English
AB We have previously reported that short-term, single exposure to a high dose of tributyltin (TBT), a widely used antifouling biocide, inhibited both the in vivo metabolism and metabolic activation of the carcinogenic polycyclic aromatic hydrocarbon benzo[a]pyrene (BaP) in fish; (BaP), in turn, stimulated TBT metabolism. Here, we provide further mechanistic evidence of mutual metabolic interactions between BaP and TBT in response to long-term, repeated exposures to low doses. Juvenile Arctic charr (Salvelinus alpinus) received 10 separate ip injections (a single injection every 6 days) of BaP (3 mg/kg), TBT (0.3 mg/kg), or both in combination; control fish received corn oil vehicle only. Two days after the 2 super(nd) (Day 8), 6 super(th) (Day 32), and 10 super(th) dose (Day 56), blood, bile, and liver samples were collected and analyzed for a suite of biomarkers. HPLC/fluorescence analysis indicated that TBT cotreatment inhibited the formation of (+)-anti-BaP diol-epoxide adducts with plasma albumin (53%, Day 8), hepatic DNA (27%, Day 32), or both albumin and globin (50 and 58%, Day 56) compared to BaP alone. This antagonistic interaction was associated with a time-dependent modulation (inhibition at Day 8, enhancement at Day 32) of both cytochrome P450 (P450)1A-mediated ethoxyresorufin O-deethylase (EROD) activity and biliary BaP metabolite formation. TBT cotreatment also inhibited (39%) the BaP-mediated induction of hepatic glutathione S-transferase (GST) activity observed at Day 8. Treatment with TBT alone increased EROD activity (60%) at Day 32, but decreased both GST activity (70 and 37%) and glutathione content (24% and 16%) at Days 32 and 56, respectively. GC/MS analysis revealed that, at Day 56, BaP cotreatment increased (200%) the levels of biliary butyltin compounds, including mono- and dibutyltin metabolites. This potentiative interaction was associated with a protective effect of

BaP cotreatment against the TBT-mediated decreases in GST activity and glutathione content. The current results demonstrate that, whereas TBT inhibited BaP bioactivation via a time-dependent modulation of P4501A induction, BaP stimulated the Phase II metabolism of TBT and/or its biliary excretion. The mutual metabolic interactions between these two widespread aquatic pollutants reinforce the need for long-term in vivo interactive studies at low doses.

L9 ANSWER 3 OF 7 PASCAL COPYRIGHT 2006 INIST-CNRS. ALL RIGHTS RESERVED. on STN

ACCESSION NUMBER: 2001-0229693 PASCAL

TITLE (IN ENGLISH): Toxic effects of chromium acetate hydroxide on cells cultivated in vitro

AUTHOR: RUDOLF Emil; PEYCHL Jan; CERVINKA Miroslav

CORPORATE SOURCE: Department of Medical Biology and Genetics, Charles University in Prague, Faculty of Medicine in Hradec Kralove, Simkova 870, Hradec Kralove I 500, Czech Republic

SOURCE: ATLA. Alternatives to laboratory animals, (2001), 29(2), 163-177, 20 refs.
ISSN: 0261-1929

DOCUMENT TYPE: Journal

BIBLIOGRAPHIC LEVEL: Analytic

COUNTRY: United Kingdom

LANGUAGE: English

AVAILABILITY: INIST-22450, 354000095048960050

AN 2001-0229693 PASCAL

AB Many human activities, particularly industrial ones, result in an ever-growing production of toxic waste materials. The dynamics of the toxic effects of chromium acetate hydroxide, which is found in high concentrations in a waste sediment produced in the Czech Republic, were assessed by using a battery of in vitro tests carried out on two cell lines: L-929 (mouse fibroblasts) and Hep 2 (human laryngeal cells). Various markers of cell damage were assessed by phase-contrast, video and fluorescence microscopy, fluorometry, and DNA analysis. Chromium acetate hydroxide, over a concentration range of 1-0.02mol/l induced immediate cell death by fixation, whereas, at 0.002mol/l, the treated cells died in a much slower, more discrete manner. All the detected markers of cell damage, whether immediate or slow, clearly demonstrated that the cells died by necrosis. On the other hand, test concentration of 0.001mol/l appeared to constitute a threshold at which no pathological changes of Hep 2 cells were observed over 96 hours. We

conclude that chromium acetate hydroxide has a high toxic potential in vitro, which should be considered when studying the toxicity of waste materials containing it.

L9 ANSWER 4 OF 7 PASCAL COPYRIGHT 2006 INIST-CNRS. ALL RIGHTS RESERVED. on STN

ACCESSION NUMBER: 2002-0125591 PASCAL

TITLE (IN ENGLISH): In vitro suppression of thymocyte apoptosis by metal-rich complex environmental mixtures: potential role of zinc and cadmium excess

AUTHOR: CHUKHLOVIN Alexei B.; TOKALOV Sergei V.; YAGUNOV Alexei S.; WESTENDORF Johannes; REINCKE Heinrich; KARBE Ludwig

CORPORATE SOURCE: Center of Hematology, St. Petersburg State Medical University, 6/8 L. Tolstoy St., St. Petersburg 187022, Russian Federation; Central Research Institute of Roentgenology and Radiology, Pesochny-2, 189646, St. Petersburg, Russian Federation; Institute of Experimental and Clinical Pharmacology and Toxicology, University of Hamburg, Vogt-Koelln ST. 30, 22527, Hamburg, Germany, Federal Republic of; Elbe River Water Quality Board, Nessdeich 120-121, 21129, Hamburg, Germany, Federal Republic of; Institute of Hydrobiology and Fisheries Science, University of Hamburg, Zeiseweg 9, 22765, Hamburg, Germany, Federal Republic of

SOURCE: Science of the total environment, (2001), 281(1-3), 153-163, refs. 1 p.1/4
ISSN: 0048-9697 CODEN: STENDL

DOCUMENT TYPE: Journal

BIBLIOGRAPHIC LEVEL: Analytic

COUNTRY: Ireland

LANGUAGE: English

AVAILABILITY: INIST-15662, 354000103409260120

AN 2002-0125591 PASCAL

AB Excessive amounts of heavy metals (e.g. Zn, Cu, Mn, Cr) are accumulated in river bottom sediments (RBS), being available to humans and animals along food chains. Increased exposure of mammals to certain metals (Cr, Cu) induces immunosuppresion, due to DNA damage and decreased survival of lymphoid cells. By contrast, excess of Zn and Cd causes inhibition of apoptosis thus suggesting increased survival of genetically mutated cells and higher cancer risks in exposed

populations. Rat thymic lymphocytes represent a well-established model for apoptosis testing. The primary goal of our study was to assess the degree of apoptosis modulation with a number of RBS extracts differing in their metal contents. A series of freshly deposited RBS was collected at nine sampling stations along the Elbe River. All sediments were rich in Fe, Mn and Zn. The contents of Cu, Cr, Ni, Cd, Hg. Pb and As were much lower and interrelated. The short-term cytotoxicity of aqueous sediment extracts was assessed, using the following criteria: total cell counts; incidence of apoptosis and necrosis (morphological detection by fluorescent microscopy); and nuclear chromatin decay (by DNA flow cytometry). RBS extracts produced both apoptosis and necrosis of thymocytes. High contents of zinc and other heavy metals in the samples correlated with decreased thymocyte apoptosis ($r = -0.543$ to -0.608, $P<0.01$). The rates of thymocyte damage showed a distinct dependence on the time and region of sampling. Apoptosis modulation was also tested with pure salts of Mn(II), Zn(II), Cu(II), Cr(III) and Cd(II), at the test concentrations of 1. 10 and 100 .mu.M. Cu(II) and Cr(III) proved to induce marked dose-related apoptosis whereas Zn(II) ions caused significant suppression of apoptosis. These effects were similar to those trends observed with metal-rich sediments. In the present study. DNA flow cytometry proved to be a less sensitive index of cell death than morphological assay of apoptosis and/or necrosis. In summary, inhibition of lymphocyte apoptosis by RBS extracts and pure metals is associated with excess of zinc and, probably, cadmium. The proposed model of lymphoid cell apoptosis is a promising tool for screening cytotoxic effects of complex environmental samples.

L9 ANSWER 5 OF 7 PASCAL COPYRIGHT 2006 INIST-CNRS. ALL RIGHTS RESERVED. on STN

ACCESSION NUMBER: 2002-0131007 PASCAL

TITLE (IN ENGLISH): Current bioremediation practice and perspective

AUTHOR: IWAMOTO Tomotada; NASU Masao

CORPORATE SOURCE: Department of Bacteriology, Kobe Institute of Health, 4-6 Minatojima-nakamachi, Chuo-ku, Kobe 650-0046, Japan; Environmental Science and Microbiology, Graduate School of Pharmaceutical Sciences, Osaka University, 1-6 Yamada-oka, Suita, Osaka 565-0871, Japan

SOURCE: Journal of bioscience and bioengineering, (2001), 92(1), 1-8, 83 refs.
ISSN: 1389-1723

DOCUMENT TYPE: Journal

BIBLIOGRAPHIC LEVEL: Analytic

COUNTRY: Japan
LANGUAGE: English
AVAILABILITY: INIST-8234, 354000096051070010
AN 2002-0131007 PASCAL

AB The use of microbes to clean up polluted environments, bioremediation, is a rapidly changing and expanding area of environmental biotechnology. Although bioremediation is a promising approach to improve environmental conditions, our limited understanding of biological contribution to the effect of bioremediation and its impact on the ecosystem has been an obstacle to make the technology more reliable and safer. Providing fundamental data to resolve these issues, i.e., the behavior of the target bacteria directly related to the degradation of contaminants and the changes in microbial communities during bioremediation, has been a challenge for microbiologists since many environmental bacteria cannot yet be cultivated by conventional laboratory techniques. The application of culture-independent molecular biological techniques offers new opportunities to better understand the dynamics of microbial communities. Fluorescence in situ hybridization (FISH), in situ PCR, and quantitative PCR are expected to be powerful tools for bioremediation to detect and enumerate the target bacteria that are directly related to the degradation of contaminants. Nucleic acid based molecular techniques for fingerprinting the 16S ribosomal DNA (rDNA) of bacterial cells, i.e., denaturing gradient gel electrophoresis (DGGE) and terminal restriction fragment length polymorphism (T-RFLP), enable us to monitor the changes in bacterial community in detail. Such advanced molecular microbiological techniques will provide new insights into bioremediation in terms of process optimization, validation, and the impact on the ecosystem, which are indispensable data to make the technology reliable and safe.

L9 ANSWER 6 OF 7 BIOTECHNO
ACCESSION NUMBER: 2000:30944926 BIOTECHNO
TITLE: Transgenic zebrafish as sentinels for aquatic pollution
AUTHOR: Carvan III M.J.; Dalton T.P.; Stuart G.W.; Nebert D.W.
CORPORATE SOURCE: D.W. Nebert, Department of Environmental Health, Univ. of Cincinnati Medical Center, P.O. Box 670056, Cincinnati, OH 45267-0056, United States.
E-mail: dan.nebert@uc.edu
SOURCE: Annals of the New York Academy of Sciences, (2000), 919/- (133-147), 56 reference(s)
CODEN: ANYAA0 ISSN: 0077-8923
DOCUMENT TYPE: Journal; Conference Article
COUNTRY: United States

LANGUAGE: English
SUMMARY LANGUAGE: English
AN 2000:30944926 BIOTECHNO
AB Using the golden mutant zebrafish having a decrease in interfering pigmentation, we are developing transgenic lines in which DNA motifs that respond to selected environmental pollutants are capable of activating a reporter gene that can be easily assayed. We have begun with three response elements that recognize three important classes of foreign chemicals. Aromatic hydrocarbon response elements (AHREs) respond to numerous polycyclic hydrocarbons and halogenated coplanar molecules such as 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD; dioxin) and polychlorinated biphenyls. Electrophile response elements (EPREs) respond to quinones and numerous other potent electrophilic oxidants. Metal response elements (MREs) respond to heavy metal cations such as mercury, copper, nickel, cadmium, and zinc. Soon, we will include estrogen response elements (EREs) to detect the effects of environmental endocrine disruptors, and retinoic acid response elements (RARE, RXRE) to detect the effects of retinoids in the environment. Each of these substances is known to be bioconcentrated in fish to varying degrees; for example, 10.sup.-.sup.1.sup.7 M TCDD in a body of water becomes concentrated to approximately 10.sup.-.sup.1.sup.2 M TCDD in a fish, where it would act upon the AHRE motif and turn on the luciferase (LUC) reporter gene. The living fish as a sentinel will not only be assayed intact in the luminometer, but - upon several days or weeks of depuration - would be usable again. To date, we have established that zebrafish transcription factors are able to recognize both mammalian and trout AHRE, EPRE, and MRE sequences in a dose-dependent and chemical-class-specific manner, and that expression of both the LUC and jellyfish green fluorescent protein (GFP) reporter genes is easily detected in zebrafish cell cultures and in the intact live zebrafish. Variations in sensitivity of this model system can be achieved by increasing the copy number of response elements and perhaps by altering the sequence of each core consensus response element and flanking regions. This transgenic technology should allow for a simple, exquisitely sensitive, and inexpensive assay for monitoring aquatic pollution. We have already initiated studies using sentinel zebrafish to monitor a public drinking water source.

L9 ANSWER 7 OF 7 PASCAL COPYRIGHT 2006 INIST-CNRS. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 1998-0538295 PASCAL
COPYRIGHT NOTICE: Copyright .COPYRGT. 1998 Elsevier Science B.V. All rights reserved.
TITLE (IN ENGLISH): Disruption of microtubule assembly and spindle formation as a mechanism for the induction of

aneuploid cells by sodium arsenite and vanadium pentoxide

AUTHOR: RAMREZ P.; EASTMOND D. A.; LACLETTE J. P.; OSTROSKY WEGMAN P.

CORPORATE SOURCE: 04510 Mexico, DF, Mexico; 04510 Mexico, DF, Mexico; Riverside, CA 92521, United States

SOURCE: Mutation research. Reviews in mutation research, (1997), 386(3), 291-298
ISSN: 1383-5742

DOCUMENT TYPE: Journal

BIBLIOGRAPHIC LEVEL: Analytic

COUNTRY: Netherlands

LANGUAGE: English

SUMMARY LANGUAGE: English

AVAILABILITY: INIST-12206F, 354000071625070020

AN 1998-0538295 PASCAL

AB Copyright (c) 1997 Elsevier Science B.V. All rights reserved. Arsenic and vanadium are important environmental and industrial pollutants. Due to their widespread occurrence and potential genotoxicity, we studied the aneuploidy-inducing effects of these elements in cultured human lymphocytes using a variety of techniques including fluorescence in situ hybridization (FISH) with DNA probes for chromosomes 1 and 7, immunostaining of the lymphocyte spindle apparatus, and an in vitro assay measuring the polymerization and depolymerization of tubulin. Dose-related increases in hyperdiploidy were seen in lymphocyte cultures treated with sodium arsenite (NaAsO.sub.2) or vanadium pentoxide (V.sub.2O.sub.5) over concentrations ranging from 0.001 to 0.1 .mu.M. NaAsO.sub.2-treated cells from different donors exhibited similar hyperdiploid frequencies, whereas substantial inter-individual variability was seen in the V.sub.2O.sub.5-treated cells. Examination of the spindle apparatus using an anti-&bgr;-tubulin antibody indicated that these compounds might disrupt spindle formation by interacting with microtubules. Additional in vitro assays using purified tubulin indicated that both compounds inhibited microtubule assembly and induced tubulin depolymerization. These results indicate that in vitro exposure to both NaAsO.sub.2 and V.sub.2O.sub.5 can induce aneuploidy in human lymphocytes, and that this effect may occur through a disruption of microtubule function.

=> (DNA or nucleic)(12A)(mercury or cd or Hg or pb or cu or copper)(fluorescence or fluorescent)
MISSING OPERATOR COPPER)(FLUORESCEN
The search profile that was entered contains terms or

nested terms that are not separated by a logical operator.

=> (DNA or nucleic)(12A)(mercury or cd or Hg or pb or cu or copper)(10A)(fluorescence or fluorescent)
L10 6 FILE AGRICOLA
L11 35 FILE BIOTECHNO
L12 0 FILE CONFSCI
L13 0 FILE HEALSAFE
L14 0 FILE IMSDRUGCONF
L15 26 FILE LIFESCI
L16 21 FILE PASCAL

TOTAL FOR ALL FILES
L17 88 (DNA OR NUCLEIC)(12A)(MERCURY OR CD OR HG OR PB OR CU OR COPPER)
(10A)(FLUORESCENCE OR FLUORESCENT)

=> l77 and (dissociate or dissociation)
L77 NOT FOUND
The L-number entered could not be found. To see the definition of L-numbers, enter DISPLAY HISTORY at an arrow prompt (=>).

=> l17 and (dissociate or dissociation)
L18 0 FILE AGRICOLA
L19 3 FILE BIOTECHNO
L20 0 FILE CONFSCI
L21 0 FILE HEALSAFE
L22 0 FILE IMSDRUGCONF
L23 0 FILE LIFESCI
L24 0 FILE PASCAL

TOTAL FOR ALL FILES
L25 3 L17 AND (DISSOCIATE OR DISSOCIATION)

=> dup rem
ENTER L# LIST OR (END):l25
DUPLICATE IS NOT AVAILABLE IN 'IMSDRUGCONF'.
ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIQUE
PROCESSING COMPLETED FOR L25
L26 2 DUP REM L25 (1 DUPLICATE REMOVED)

=> d l26 ibib abs total

L26 ANSWER 1 OF 2 BIOTECHNO COPYRIGHT 2006 Elsevier Science B.V. on STN
DUPLICATE

ACCESSION NUMBER: 2001:32249450 BIOTECHNO
TITLE: Caffeine dissociates complexes between DNA and intercalating dyes: Application for bleaching fluorochrome-stained cells for their subsequent restaining and analysis by laser scanning cytometry
AUTHOR: Bedner E.; Du L.; Traganos F.; Darzynkiewicz Z.
CORPORATE SOURCE: Dr. Z. Darzynkiewicz, Brander Cancel Research Institute, New York Medical College, 19 Bradhurst Avenue, Hawthorne, NY 10523, United States.
E-mail: darzynk@nymc.edu
SOURCE: Cytometry, (01 JAN 2001), 43/1 (38-45), 26 reference(s)
CODEN: CYTODQ ISSN: 0196-4763
DOCUMENT TYPE: Journal; Article
COUNTRY: United States
LANGUAGE: English
SUMMARY LANGUAGE: English
AN 2001:32249450 BIOTECHNO
AB Background: Removal of the nucleic acid-bound fluorochrome is desirable when stained cells have to be reanalyzed using other fluorochromes. It is also often desirable to remove DNA-bound antitumor drugs from drug-treated cells, to improve cell staining. We have previously observed that in aqueous solutions, the methylxanthine caffeine (CFN) decreases interactions between planar aromatic molecules such as intercalating dyes or antitumor drugs and nucleic acids. The aim of this study was to explore whether this property of CFN can be utilized to remove the DNA-bound intercalating dyes propidium iodide (PI) or 7-aminoactinomycin D (7-AAD) from the cells and whether the bleached cells can be restained and reanalyzed. Methods: HL-60 cells were fixed in 70% ethanol and their DNA was stained with PI or 7-AAD. The cells were then rinsed with a 0.05 M solution of CFN in phosphate-buffered saline (PBS) or with PBS alone. The decrease in intensity of cell fluorescence during rinsing was measured by laser scanning cytometry (LSC) to obtain the bleaching kinetics of individual cells. The bleached cells were then restained with PI, 7-AAD, or the protein-specific fluorochrome sulforhodamine 101(S101). Their fluorescence was measured again by LSC. In addition, free DNA was subjected to gel electrophoresis, DNA bands in the gels were stained with ethidium bromide (EB), and the gels were rinsed with a solution of CFN or PBS to bleach the DNA band's fluorescence.
Results: Rinsing the PI or 7-AAD-stained cells with solutions of CFN led to nearly complete removal of PI and a more than 75% decrease in 7-AAD fluorescence after 10 min. The rinse with PBS decreased the PI cell fluorescence intensity by less than 30% and the 7-AAD fluorescence by about 50%. The differences in kinetics of PI or 7-AAD removal by CFN from G.sub.2/M versus G.sub.1 cells suggest that these intercalators bind more strongly to DNA in chromatin of G.sub.2/M than G.sub.1 cells. The

CFN-bleached cells were then successfully stained with S101 and again with PI or 7-AAD. The bivariate analysis of the LSC merged files of the cells sequentially stained with PI and S101 revealed typical DNA/protein distributions. The fluorescence of EB-stained DNA bands in gels was also nearly completely removed by rinsing gels in 0.05 M CFN; PBS alone had a distinctly lesser effect. Conclusion: Solutions of CFN can dissociate the DNA-bound PI, 7-AAD, EB, and possibly other intercalating fluorochromes. The bleached cells can be restained and reanalyzed by LSC. This approach can also be used to remove such fluorochromes from nucleic acids immobilized in gels and perhaps in other solid matrices. Analysis of the kinetics of fluorochrome removal from cells can possibly be used to study their binding affinities to nucleic acids in situ. .COPYRGT. 2001 Wiley-Liss, Inc.

L26 ANSWER 2 OF 2 BIOTECHNO COPYRIGHT 2006 Elsevier Science B.V. on STN
ACCESSION NUMBER: 1996:26054287 BIOTECHNO
TITLE: Equilibrium dissociation and unfolding of the dimeric human papillomavirus strain-16 E2 DNA-binding domain
AUTHOR: Mok Y.-K.; De Prat Gay G.; Butler P.J.; Bycroft M.
CORPORATE SOURCE: MRC Unit for Protein Function/Design, Department of Chemistry, University of Cambridge, Lensfield Road,Cambridge CB2 1EW, United Kingdom.
SOURCE: Protein Science, (1996), 5/2 (310-319)
CODEN: PRCIEI ISSN: 0961-8368
DOCUMENT TYPE: Journal; Article
COUNTRY: United States
LANGUAGE: English
SUMMARY LANGUAGE: English
AN 1996:26054287 BIOTECHNO
AB The equilibrium unfolding reaction of the C-terminal 80-amino-acid dimeric DNA-binding domain of human papillomavirus (HPV) strain 16 E2 protein has been investigated using fluorescence, far-UV CD, and equilibrium sedimentation. The stability of the HPV-16 E2 DNA-binding domain is concentration-dependent, and the unfolding reaction is well described as a two-state transition from folded dimer to unfolded monomer. The conformational stability of the protein, .DELTA.G(H.sub.2O), was found to be 9.8 kcal/mol at pH 5.6, with the corresponding equilibrium unfolding/dissociation constant, K(u), being 6.5 x 10.sup.-.sup.8 M. Equilibrium sedimentation experiments give a K(d) of 3.0 x 10.sup.-.sup.8 M, showing an excellent agreement between the two different techniques. Denaturation by temperature followed by the change in ellipticity also shows a concomitant disappearance of secondary and tertiary structures. The K(u) changes dramatically at physiologically relevant pH's: with a change in pH from

6.1 to 7.0, it goes from 5.5 x 10.sup.-.sup.8 M to 4.4 x 10.sup.1.sup.0 M. Our results suggest that, at the very low concentration of protein where DNA binding is normally measured (e.g., 10.sup.-.sup.1.sup.1 M), the protein is predominantly monomeric and unfolded. They also stress the importance of the coupling between folding and DNA binding.

=> (toxicity or toxicant) and (heavy metal) and (fluorescence or fluorescent)
L27 10 FILE AGRICOLA
L28 17 FILE BIOTECHNO
L29 0 FILE CONFSCI
L30 10 FILE HEALSAFE
L31 0 FILE IMSDRUGCONF
L32 68 FILE LIFESCI
L33 253 FILE PASCAL

TOTAL FOR ALL FILES
L34 358 (TOXICITY OR TOXICANT) AND (HEAVY METAL) AND (FLUORESCENCE OR
FLUORESCENT)

=> l34 and (DNA or nucleic)
L35 0 FILE AGRICOLA
L36 4 FILE BIOTECHNO
L37 0 FILE CONFSCI
L38 1 FILE HEALSAFE
L39 0 FILE IMSDRUGCONF
L40 6 FILE LIFESCI
L41 22 FILE PASCAL

TOTAL FOR ALL FILES
L42 33 L34 AND (DNA OR NUCLEIC)

=> dup rem
ENTER L# LIST OR (END):l42
DUPLICATE IS NOT AVAILABLE IN 'IMSDRUGCONF'.
ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIQUE
PROCESSING COMPLETED FOR L42
L43 29 DUP REM L42 (4 DUPLICATES REMOVED)

=> l43 and py<2001
L44 0 S L43
L45 0 FILE AGRICOLA
L46 4 S L43
L47 1 FILE BIOTECHNO
L48 0 S L43

'2001' NOT A VALID FIELD CODE
L49 0 FILE CONFSCI
L50 1 S L43
L51 0 FILE HEALSAFE
L52 0 S L43
L53 0 FILE IMSDRUGCONF
L54 4 S L43
L55 3 FILE LIFESCI
L56 20 S L43
L57 9 FILE PASCAL

TOTAL FOR ALL FILES
L58 13 L43 AND PY<2001

=>

=>

=>

=>

=>

=> exit

ALL L# QUERIES AND ANSWER SETS ARE DELETED AT LOGOFF
LOGOFF? (Y)/N/HOLD:n

=> d l58 ibib abs total

L58 ANSWER 1 OF 13 BIOTECHNO COPYRIGHT 2006 Elsevier Science B.V. on STN
ACCESSION NUMBER: 1999:29389688 BIOTECHNO
TITLE: The chromosome-based challenge assay using fluorescence in situ hybridization: A possible test for increased cancer susceptibility
AUTHOR: Oberheitmann B.; Schafer J.; Dally H.; Garms A.; Frentzel-Beyme R.; Hoffmann W.
CORPORATE SOURCE: B. Oberheitmann, UFT-Zentrum fur Umweltforschung, Umwelttechnologie, Universitat Bremen, D-28334 Bremen, Germany.
E-mail: boris.oberheitmann@uni-bremen.de
SOURCE: Mutation Research - Fundamental and Molecular Mechanisms of Mutagenesis, (1999), 428/1-2 (157-164), 26 reference(s)

CODEN: MRFMEC ISSN: 0027-5107
PUBLISHER ITEM IDENT.: S1383574299000435
DOCUMENT TYPE: Journal; Conference Article
COUNTRY: Netherlands
LANGUAGE: English
SUMMARY LANGUAGE: English
AN 1999:29389688 BIOTECHNO
AB The challenge assay is a cytogenetic approach to measure the repair competence of cells. For in vitro studies, human lymphocytes are exposed to different substances and are irradiated simultaneously. To investigate subjects exposed occupationally or environmentally, untreated blood samples are directly irradiated without any further treatment. Certain substances like heavy metals reveal carcinogenic potential without well defined mechanism of action. While they are not mutagenic they may have an effect on DNA repair capacity. The challenge assay was successfully applied in vitro experiments with cadmium to detect an interaction of this heavy metal with the repair of X-ray-induced chromosome breaks. CdCl.sub.2 alone had no effect on the formation of chromosome aberrations (CA), not even in the cytotoxic concentration (50 .mu.M). However, cadmium showed an effect on the number of chromosomal rearrangements (CR) after X-ray challenge. For 0.5 .mu.M CdCl.sub.2, CA frequencies were significantly elevated compared to the rates for X-rays alone. For the two higher concentrations the rates showed a slight additional increase. Hence, the challenge assay appears suitable to test for chromosomal sensitivity induced by toxicants. Subsequently, a study of styrene exposed workers was initiated to address the question whether styrene exposure has an influence on the DNA repair. In addition, we investigated whether a polymorphism of genes coding for phase II detoxifying enzymes glutathione-S-transferases GSTM1 and GSTT1 had an influence on chromosomal sensitivity. First and preliminary data are presented. While there is a correlation of the rate of CR with cumulative lifetime exposure of styrene, the most recent styrene exposure had no effect. 'At risk' genotypes with higher incidence of CA could not be identified at this stage of the ongoing study. Conclusion: the challenge assay is able to detect enhanced susceptibility for CR caused by genetic predisposition for DNA repair deficiency. Our data indicate that environmental or occupational exposure to certain substances can interfere with DNA repair processes. As the process of induction of CR is associated with carcinogenesis, the challenge assay may provide a valuable biomarker for cancer epidemiology studies.

L58 ANSWER 2 OF 13 LIFESCI
ACCESSION NUMBER: 2001:10168 LIFESCI
TITLE: Genetics and marine pollution

AUTHOR: Dixon, D.R.; Wilson, J.T.
CORPORATE SOURCE: Southampton Oceanography Centre, Empress Dock, Southampton
SO14 3ZH, U.K.
SOURCE: Hydrobiologia, (20000200) vol. 420, no. 1, pp. 29-43.
ISSN: 0018-8158.
DOCUMENT TYPE: Journal
FILE SEGMENT: X; Q4; G
LANGUAGE: English
SUMMARY LANGUAGE: English
AB The development of cytogenetic methods applied to cells and tissues of marine invertebrates has been hampered by (1) a lack of in vitro cell lines, (2) inadequate karyotypic information (partly as a result of too few workers chasing too many organisms), and (3) the failure of their chromosomes to band satisfactorily. Compared to mammalian cytogenetics, our knowledge of marine invertebrates lags behind by several decades. With the current concern about mutagens in the marine environment, and the recognition that the cells of marine species have sensitivities to DNA-damaging agents similar to those of higher organisms, there is a need for methods which can be used (a) in environmental monitoring and (b) to screen potentially harmful substances in the laboratory. In the absence of in vitro cell lines, embryos and larvae have been used to provide a supply of dividing cells for mutation studies, although the advent of molecular methods has now brought with it the means to detect DNA damage without any need for the cells to be in a dividing state. Moreover, the use of FISH (Fluorescence In Situ Hybridisation) now makes it possible to study numerical and structural chromosomal aberrations with far greater accuracy than was previously possible. A new marine genotoxicity assay is described, based on the embryos and larvae of a tube-dwelling polychaete worm (Pomatoceros lamarkii), suitable for both laboratory studies and field monitoring. This new Pomatoceros assay provides, at the same time, a useful model for studying the consequences of adult exposure on the offspring. A novel application of marine cytogenetic research is the study of the evolutionary adaptations of invertebrates living in naturally polluted extreme environments viz. deep sea hydrothermal vents, which are typified by high levels of toxic heavy metals and radionuclides, substances known to inflict damage to DNA. Given these new methodological and conceptual advances, it is predicted that our understanding of the role played by mutation in the marine environment, both in an evolutionary and toxicological context, will increase dramatically over the next decade.

L58 ANSWER 3 OF 13 LIFESCI COPYRIGHT 2006 CSA on STN
ACCESSION NUMBER: 2000:13275 LIFESCI

TITLE: Selective induction of apoptosis of renal proximal tubular cells caused by inorganic mercury in vivo
AUTHOR: Homma-Takeda, S.; Takenaka, Y.; Kumagai, Y.; Shimojo, N.
CORPORATE SOURCE: Graduate School Doctoral Program in Medical Sciences, University of Tsukuba, 1-1-1 Tennodai, Tsukuba, Ibaraki 305-8575, Japan; E-mail: mk99d165@md.tsukuba.ac.jp
SOURCE: Environmental Toxicology and Pharmacology [Environ. Toxicol. Pharmacol.], (19990700) vol. 7, no. 3, pp. 179-187.
ISSN: 1382-6689.
DOCUMENT TYPE: Journal
FILE SEGMENT: X
LANGUAGE: English
SUMMARY LANGUAGE: English
AB A recent notion, that a variety of toxicants causing necrosis can lead to apoptosis as well, has been demonstrated with cultured cells, but not with in an vivo system. In the present study, we examined the induction of both apoptosis and necrosis in the kidneys of Wistar rats exposed to mercuric chloride (HgCl sub(2)). A single injection of HgCl sub(2) to rats at a dose of 4 mg/kg resulted in an increase in the renal DNA fragmentation evaluated as an occurrence of apoptosis, prior to urinary excretion of alkaline phosphatase (ALP) and renal morphological changes assessed as necrotic phenomena. The mercury-promoted DNA fragmentation was induced in a dose-dependent manner. Terminal deoxynucleotidyl transferase-mediated dUTP nick end-labeling (TUNEL) staining and morphological observation of the nuclei revealed that apoptotic cells caused by HgCl sub(2) were predominantly found in the proximal tubules, but not in the distal tubules, glomeruli or medullary tubules. When we confirmed the proximal tubular-selective apoptosis by inorganic mercury with a combined technique of TUNEL staining with synchrotron radiation X-ray fluorescence (SR-XRF) imaging, it was shown that the apoptotic cells localized in the proximal tubules did contain higher level of mercury. Thus these results indicate that the proximal tubular cells-dominant site-specific distribution of mercury appears to be associated with induction of renal apoptosis and necrosis.

L58 ANSWER 4 OF 13 LIFESCI COPYRIGHT 2006 CSA on STN
ACCESSION NUMBER: 1999:55882 LIFESCI
TITLE: An application of bacterial flow cytometry: Evaluation of the toxic effects of four heavy metals on Acinetobacter sp. with potential for bioremediation of contaminated wastewaters
AUTHOR: Boswell, C.D.; Hewitt, C.J.; Macaskie, L.E.*
CORPORATE SOURCE: School of Biological Sciences, The University of Birmingham, Edgbaston, B15 2TT, UK
SOURCE: Biotechnology Letters [Biotechnol. Lett.], (

19980900) vol. 20, no. 9, pp. 857-863.
ISSN: 0141-5492.
DOCUMENT TYPE: Journal
FILE SEGMENT: W2; X; A
LANGUAGE: English
SUMMARY LANGUAGE: English
AB Acinetobacter johnsonii has potential use in the remediation of heavy metal-contaminated wastewaters. For metal accumulation, cells must remain intact and metabolically active. The effect of possible accumulation targets, Cd super(2+), UO sub(2) super(2+), Cu super(2+), and Ni super(2+) on cytoplasmic membrane integrity and polarity was investigated by flow cytometry using a mixture of two fluorescent dyes, propidium iodide and bis-oxonol. The former binds to DNA but cannot cross an intact cytoplasmic membrane, whilst the latter is anionic, lipophilic and stains depolarized cytoplasmic membranes. All four metals permeabilized the cytoplasmic membrane of some cells during the period of exposure. The effects of the metals differed in that Cu super(2+) and Cd super(2+) also generated an intermediate population of cells, having intact but depolarized cytoplasmic membranes. Electron microscopy showed corresponding cellular abnormalities following metal exposure.

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on STN
ACCESSION NUMBER: 2000-0489207 PASCAL
COPYRIGHT NOTICE: Copyright .COPYRGT. 2000 INIST-CNRS. All rights reserved.
TITLE (IN ENGLISH): Lead nitrate induced apoptosis in alveolar macrophages from rat lung
AUTHOR: SHABANI A.; RABBANI A.
CORPORATE SOURCE: Institute of Biochemistry and Biophysics, University of Tehran, P.O. Box 13145-1384, Tehran, Iran (Islamic Republic of)
SOURCE: Toxicology : (Amsterdam), (2000), 149(2-3), 109-114, 26 refs.
ISSN: 0300-483X CODEN: TXICDD
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: Ireland
LANGUAGE: English
AVAILABILITY: INIST-15984, 354000091902820070
AN 2000-0489207 PASCAL
CP Copyright .COPYRGT. 2000 INIST-CNRS. All rights reserved.
AB In this work we have attempted to characterize the programmed cell death (apoptosis) in alveolar macrophages exposed to various concentrations of

lead nitrate. It was found that after 3 h of exposure a significant increase in superoxide anion production was observed, i.e. the number of trypan blue exculding cells, was unchanged (< 95%) with any dose of lead employed. Agarose gel electrophoresis and diphenylamin reaction analysis revealed the occurrence of internucleosomal DNA fragmentation evaluated using cytological analysis by fluorescence dyes, suggesting that lead nitrate at low concentrations and short periods of exposure leads macrophages into apoptosis. However, time course studies showed that beyond 3 h, toxicity occurs, which could be attenuated by phosphodiesterase inhibitors, such as caffeine, suggesting a possible mechanism involving cAMP.

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on STN
ACCESSION NUMBER: 1999-0279644 PASCAL
COPYRIGHT NOTICE: Copyright .COPYRGT. 1999 INIST-CNRS. All rights reserved.
TITLE (IN ENGLISH): DNA damage and repair in yeast (Saccharomyces cerevisiae) cells exposed to lead
AUTHOR: XIAOFAN YUAN; CHIACHUN TANG
CORPORATE SOURCE: Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, P.O. Box 2871, Beijing, 100085, China
SOURCE: Journal of environmental science and health. Part A, Environmental science and engineering, (1999) , 34(5), 1117-1128, refs. 1 p.1/2
ISSN: 0360-1226 CODEN: JESEDU
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: United States
LANGUAGE: English
AVAILABILITY: INIST-15710A, 354000084151020070
AN 1999-0279644 PASCAL
CP Copyright .COPYRGT. 1999 INIST-CNRS. All rights reserved.
AB The DNA damage and repair effects of yeast (Saccharomyces cerevisiae) cells induced by lead (Pb) were tested in this study. Yeast cells were cultured for 72 h at the following Pb concentrations : 0 (controls), lppm (11.6 .mu.g/dl) and 8 ppm (92.6 .mu.g/dl), and 0.1 g kappa-selenocarrageenan (10000 .mu.g Se/g) used as repair reagent was added directly to the yeast culture medium (100 ml) for the repair assays. The percentage of damaged cells was observed from fluorescence microscope. Statistical analysis showed that the two lead doses damaged DNA structure of yeast cells significantly, and the higher concentration made more serious damage than that of the lower concentration. With the addition of kappa-selenocarrageenan,

DNA damage was repaired to some degree. Furthermore, the accumulation effects of DNA damage from the parent generation to the filial generation yeast cells was also investigated. At the lower lead concentration, the accumulation effects were more significant than that at the higher concentration.

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on STN
ACCESSION NUMBER: 1999-0279219 PASCAL
COPYRIGHT NOTICE: Copyright .COPYRGT. 1999 INIST-CNRS. All rights reserved.
TITLE (IN ENGLISH): Characterization of cadmium-induced apoptosis in rat lung epithelial cells : evidence for the participation of oxidant stress
AUTHOR: HART B. A.; LEE C. H.; SHUKLA G. S.; SHUKLA A.; OSIER M.; ENEMAN J. D.; CHIU J.-F.
CORPORATE SOURCE: Department of Biochemistry, University of Vermont College of Medicine, Burlington, VT 05405-0068, United States
SOURCE: Toxicology : (Amsterdam), (1999), 133(1), 43-58, refs. 1 p.1/4
ISSN: 0300-483X CODEN: TXICDD
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: Ireland
LANGUAGE: English
AVAILABILITY: INIST-15984, 354000084346650030
AN 1999-0279219 PASCAL
CP Copyright .COPYRGT. 1999 INIST-CNRS. All rights reserved.
AB The mode of cadmium-induced cell death was investigated in a rat lung epithelial cell line. Cells, grown to near confluence, were exposed to 0-30 .mu.M CdCl.sub.2 for 0-72 h. Phase contrast microscopy and fluorescent nuclear staining showed that Cd caused morphological alterations in lung epithelial cells that are characteristic of apoptosis. These changes included cell shrinkage, detachment of the cell from its neighbors, cytoplasmic and chromatin condensation, and fragmentation of the nucleus into multiple chromatin bodies surrounded by remnants of the nuclear envelope. Apoptotic DNA degradation was validated and quantitated using a sensitive enzyme-linked immunosorbent assay (ELISA) which measures the amount of histone-bound DNA fragments in the cytosol. Using this technique, a maximum level of apoptosis (5-fold higher than control) was observed in cultures exposed for 48 h to 20 .mu.M CdCl.sub.2. The terminal deoxyribonucleotidyl transferase mediated dUTP nick end labeling method (TUNEL) was subsequently used to determine the percentage of cells that contained

Cd-induced DNA strand breaks. After 48 h, approximately 54% of the cells exposed to 20 .mu.M Cd were TUNEL positive compared to less than 2% for control cells. Although the mechanisms by which Cd initiates apoptosis in these cells are presently not known, reactive oxygen species are likely to play a role. This possibility is supported by the finding that the first morphological features indicative of apoptosis were preceded by the up-regulation of oxidant stress genes (glutathione S-transferase-a, y-glutamylcysteine synthetase, and metallothionein-1), activation of redox sensitive transcription factors (AP-I and NF-KB), and changes in various forms of glutathione (reduced, oxidized, and protein-bound).

L58 ANSWER 8 OF 13 PASCAL COPYRIGHT 2006 INIST-CNRS. ALL RIGHTS RESERVED.
on STN
ACCESSION NUMBER: 1999-0128304 PASCAL
COPYRIGHT NOTICE: Copyright .COPYRGT. 1999 INIST-CNRS. All rights reserved.
TITLE (IN ENGLISH): Mercuric chloride induces apoptosis in human T lymphocytes : Evidence of mitochondrial dysfunction
AUTHOR: TAI LIANG GUO; MILLER M. A.; SHAPIRO I. M.; SHENKER B.
J.
CORPORATE SOURCE: Department of Pathology, University of Pennsylvania School of Dental Medicine, Philadelphia, Pennsylvania 19104, United States; Department of Biochemistry, University of Pennsylvania School of Dental Medicine, Philadelphia, Pennsylvania 19104, United States
SOURCE: Toxicology and applied pharmacology, (1998), 153(2), 250-257, 38 refs.
ISSN: 0041-008X CODEN: TXAPA9
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: United States
LANGUAGE: English
AVAILABILITY: INIST-9067, 354000073523480110
AN 1999-0128304 PASCAL
CP Copyright .COPYRGT. 1999 INIST-CNRS. All rights reserved.
AB The major objective of our study was to define the mechanism by which mercuric chloride (HgCl.sub.2) induces human T-cell death. Human peripheral blood T-cells were exposed to 0-40 .mu.M HgCl.sub.2 and then analyzed for biochemical and molecular features of T-cell apoptosis. HgCl.sub.2-treated cells exhibited increased Hoechst 33258 fluorescence while maintaining their ability to exclude the vital stain 7-aminoactinomycin D. To further evaluate cell death and distinguish between apoptosis and necrosis, translocation of

phosphatidyl-serine to the outer layer of the plasma membrane (annexin V binding), DNA fragmentation (TUNEL assay), and cleavage of poly (ADP-ribose) polymerase (PARP) were assessed. In the presence of 20-40 .mu.M HgCl.sub.2, T-cells exhibited increased annexin V binding (28%) and DNA fragmentation (31%). HgCl.sub.2-dependent PARP cleavage was also observed by Western blot analysis. Because degradative changes associated with apoptosis are often preceded by disruption of mitochondrial function, HgCl.sub.2-treated cells were assessed for disruption of the mitochondrial transmembrane potential (.DELTA..PSI..sub.m) and development of the mitochondrial permeability transition state. Using DiOC.sub.6(3), we demonstrated that HgCl.sub.2 exposure resulted in a decrease in the .DELTA..PSI..sub.m. Because a decline in .DELTA..PSI..sub.m can disturb the intracellular pH (pH.sub.i), we used the fluorescent probe, SNARF-1, to assess intracellular acidification. Treatment of T-cells with HgCl.sub.2 resulted in reduced pH.sub.i from 7.0 to 6.7. Concomitant with these observations, the fluorescent probe, hydroethidine, was utilized to demonstrate that uncoupled mitochondrial electron transport resulted in increased reactive oxygen species (ROS) generation. Interestingly, in spite of these alterations to mitochondrial function, translocation of cytochrome c to the cytosol was not detected; this correlated with enhanced bcl-2 levels in HgCl.sub.2-treated cells. In conclusion, HgCl.sub.2 exposure results in oxidative stress and activation of death signaling pathways leading to apoptosis. Collectively, our studies indicate that individual mercurial species are capable of inducing T-cell death by activating specific apoptotic cascades.

L58 ANSWER 9 OF 13 PASCAL COPYRIGHT 2006 INIST-CNRS. ALL RIGHTS RESERVED.
on STN
ACCESSION NUMBER: 1998-0538295 PASCAL
COPYRIGHT NOTICE: Copyright .COPYRGT. 1998 Elsevier Science B.V. All rights reserved.
TITLE (IN ENGLISH): Disruption of microtubule assembly and spindle formation as a mechanism for the induction of aneuploid cells by sodium arsenite and vanadium pentoxide
AUTHOR: RAMREZ P.; EASTMOND D. A.; LACLETTE J. P.; OSTROSKY WEGMAN P.
CORPORATE SOURCE: 04510 Mexico, DF, Mexico; 04510 Mexico, DF, Mexico; Riverside, CA 92521, United States
SOURCE: Mutation research. Reviews in mutation research, (1997), 386(3), 291-298
ISSN: 1383-5742

DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: Netherlands
LANGUAGE: English
SUMMARY LANGUAGE: English
AVAILABILITY: INIST-12206F, 354000071625070020
AN 1998-0538295 PASCAL

AB Copyright (c) 1997 Elsevier Science B.V. All rights reserved. Arsenic and vanadium are important environmental and industrial pollutants. Due to their widespread occurrence and potential genotoxicity, we studied the aneuploidy-inducing effects of these elements in cultured human lymphocytes using a variety of techniques including fluorescence in situ hybridization (FISH) with DNA probes for chromosomes 1 and 7, immunostaining of the lymphocyte spindle apparatus, and an in vitro assay measuring the polymerization and depolymerization of tubulin. Dose-related increases in hyperdiploidy were seen in lymphocyte cultures treated with sodium arsenite (NaAsO.sub.2) or vanadium pentoxide (V.sub.2O.sub.5) over concentrations ranging from 0.001 to 0.1 .mu.M. NaAsO.sub.2-treated cells from different donors exhibited similar hyperdiploid frequencies, whereas substantial inter-individual variability was seen in the V.sub.2O.sub.5-treated cells. Examination of the spindle apparatus using an anti-&bgr;-tubulin antibody indicated that these compounds might disrupt spindle formation by interacting with microtubules. Additional in vitro assays using purified tubulin indicated that both compounds inhibited microtubule assembly and induced tubulin depolymerization. These results indicate that in vitro exposure to both NaAsO.sub.2 and V.sub.2O.sub.5 can induce aneuploidy in human lymphocytes, and that this effect may occur through a disruption of microtubule function.

L58 ANSWER 10 OF 13 PASCAL COPYRIGHT 2006 INIST-CNRS. ALL RIGHTS RESERVED.
on STN
ACCESSION NUMBER: 1998-0212175 PASCAL

TITLE (IN ENGLISH): Lipopolysaccharide and interleukin-6 enhance lead entry into cerebellar neurons : Application of a new and sensitive flow cytometric technique to measure intracellular lead and calcium concentrations
AUTHOR: DYATLOV V. A.; DYATLOVA O. M.; PARSONS P. J.; LAWRENCE D. A.; CARPENTER D. O.
CORPORATE SOURCE: Wadsworth Center for Laboratories and Research, New York State Department of Health, Albany, New York

12201-0509, United States; School of Public Health, University at Albany, State University of New York, Albany, New York 12201-0509, United States
SOURCE: Neurotoxicology : (Park Forest South), (1998), 19(2), 293-302, refs. 1 p.3/4
ISSN: 0161-813X
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: United States
LANGUAGE: English
AVAILABILITY: INIST-18397, 354000075125520130
AN 1998-0212175 PASCAL

AB The distribution of intracellular ionized lead (Pb) and calcium in dissociated cerebellar cells of ten-day-old mice was measured by flow cytometry. There are no fluorescent probes specific for lead, whereas commonly used fluorescent calcium indicators bind heavy metals with greater affinity than they do calcium, which impedes discrimination of lead- and calcium-induced fluorescence changes. Therefore, we developed a method to determine [Pb.sup.2.sup.+].sub.i and [Ca.sup.2.sup.+].sub.i by employing a combination of the calcium indicator fluo-3 and the heavy-metal chelator TPEN. Using these methods, we studied the effects of multiple in vivo exposure (five subcutaneous injections over 10 days) to lipopolysaccharide (LPS, 100 ng/g), recombinant mouse interleukin-6 (IL-6, 5 ng/g) and/or inorganic lead (lead, 2.5 .mu.g/g) on lead and calcium concentrations. Control cells had [Ca.sub.i] of 112 nM. Lead exposure alone had little effect on [Ca.sup.2.sup.+].sub.i.sub., and resulted in a mean [Pb.sup.2.sup.+].sub.i of about 7 pM, and did not alter cell volume. A significant fraction of cells (about 44% of living cells) from animals treated with lead plus LPS were swollen, as determined by analysis of the light scattering pattern, and there was a small increase in the number of dead cells, identified with the nucleic acid stain, 7-aminoactinomycin. While [Ca.sup.2.sup.+].sub.i was not significantly increased in animals treated with either only LPS or IL-6, lead and calcium concentrations were increased in animals exposed to lead and LPS or IL-6 in both the non-swollen and swollen cells, with a mean value of (Pb.sup.2.sup.+).sub.i of 32 pM and (Ca.sup.2.sup.+).sub.i of 155 nM in cells not swollen. Electrophysiological analysis showed that L PS injections caused decreases in the membrane potential of endothelial cells of the blood-brain barrier (BBB) and lead potentiated the effect of LPS. IL-6 mimicked the effects of LPS, but was less potent. Thus these experiments indicate a synergistic interaction between lead and cytokines on biophysical properties of both neurons and endothelial cells of the BBB.

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on STN
ACCESSION NUMBER: 1997-0258024 PASCAL

TITLE (IN ENGLISH): Induction of apoptosis in human T-cells by organomercuric compounds : A flow cytometric analysis
AUTHOR: SHENKER B. J.; DATAR S.; MANSFIELD K.; SHAPIRO I. M.
CORPORATE SOURCE: Department of Pathology, School of Dental Medicine, University of Pennsylvania, Philadelphia, Pennsylvania 19104, United States; Department of Biochemistry, School of Dental Medicine, University of Pennsylvania, Philadelphia, Pennsylvania 19104, United States
SOURCE: Toxicology and applied pharmacology, (1997), 143(2), 397-406, 34 refs.
ISSN: 0041-008X CODEN: TXAPA9
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: United States
LANGUAGE: English
AVAILABILITY: INIST-9067, 354000064942080160
AN 1997-0258024 PASCAL

AB Although several lines of investigation demonstrate that many heavy metals are cytotoxic to host defense cells, the mechanism of killing is poorly understood. The major focus of this investigation was to determine if organic mercuric compounds kill human lymphocytes by inducing the cells to undergo apoptosis and to evaluate possible flow cytometric systems for assessing cell death. T-cells were exposed to 0.6-5 .mu.M MeHgCl, EtHgCl, or PhHgCl for up to 24 hr and then analyzed by flow cytometry. Mercury-treated cells exhibited increased Hoechst 33258 and 33342 fluorescence while maintaining their ability to exclude the vital stain 7-AAD. Furthermore, T-cells exposed to mercury exhibited changes in light scatter patterns that included decreased forward light scatter and increased side scatter. The light scatter and fluorescent changes were consistent with changes that cells display during apoptosis. To further evaluate cell death and to distinquish between apoptosis and necrosis, merocyanine 540 staining and annexin V binding to the plasma membrane as well as DNA fragmentation were assessed. Mercury-treated cells exhibited increased merocyanine 540 fluorescence and annexin V binding along with changes in nuclear morphology consistent with the notion of apoptosis. Conventional agarose gel electrophoresis failed to demonstrate low-molecular-weight DNA bands; however, when probed by flow

cytometry using both nick translation and a modified TUNEL assay, patterns consistent with nuclear fragmentation were evident. We noted that the percentage of T-cells undergoing apoptosis was dependent upon the amount of serum present in the medium; as serum concentrations were increased from 0 to 10%, cell death declined. Apoptosis (33%) was observed within 1 hr of exposure to MeHgCl; maximum cell death (67%) occurred after 24 hr exposure. Induction of apoptosis was dependent on the mercury concentration and independent of the hydrophobicity of the mercury ligand. Finally, we assessed mercury-dependent apoptosis in activated T-cells. When treated with mitogen, mercury failed to induce apoptosis in these cells. Indeed, there was no evidence of either apoptosis nor necrosis in these populations. It was concluded that the activation process prevented development of a metabolic state that was required for induction of apoptogenic genes.

L58 ANSWER 12 OF 13 PASCAL COPYRIGHT 2006 INIST-CNRS. ALL RIGHTS RESERVED.
on STN
ACCESSION NUMBER: 1996-0107395 PASCAL
COPYRIGHT NOTICE: Copyright .COPYRGT. 1996 INIST-CNRS. All rights reserved.
TITLE (IN ENGLISH): The use of fluorescence in situ hybridization with a .beta.-satellite DNA probe for the detection of acrocentric chromosomes in vanadium-induced micronuclei
AUTHOR: MIGLIORE L.; SCARPATO R.; FALCO P.
CORPORATE SOURCE: Univ. Pisa, dip. sci. ambiente territorio, 56100 Pisa, Italy
SOURCE: Cytogenetics and cell genetics, (1995), 69(3-4), 215-219, 34 refs.
ISSN: 0301-0171 CODEN: CGCGBR
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: Switzerland
LANGUAGE: English
AVAILABILITY: INIST-10561, 354000056004250140
AN 1996-0107395 PASCAL
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AB Vanadium salts have been shown to be aneuploidogenic in human lymphocyte cultures. In particular, increases in the frequency of chromosome satellite associations and a high proportion of induced micronuclei with centromeric signals seem to be connected with chromosome malsegregation mechanisms in which acrocentric chromosomes may be involved. Our aim was to assess the contribution of these chromosomes to the formation of vanadium-induced micronuclei by applying the fluorescence in situ hybridization technique to the human lymphocyte micronucleus assay.

Whole blood cultures were treated after 24 h with 0, 10, 40, and 80 .mu.M sodium orthovanadate or vanadyl sulfate and harvested at 72 h ; vinblastine, 20 ng/ml, was used as a reference compound. The slides were then hybridized with biotin-labeled .beta.-satellite DNA probes specific for all human acrocentric chromosomes. After chemical treatment, the percentage of micronuclei with fluorescent signals was found to be statistically higher than that in control cultures, whereas vinblastine induced only a slight increase in micronuclei.

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on STN
ACCESSION NUMBER: 1994-0541219 PASCAL
COPYRIGHT NOTICE: Copyright .COPYRGT. 1994 INIST-CNRS. All rights reserved.
TITLE (IN ENGLISH): Molecular mechanisms of nickel carcinogenesis
AUTHOR: COSTA M.; ZHIXIONG ZHUANG; XI HUANG; COSENTINO S.;
KLEIN C. B.; SALNIKOW K.
NIEBOER Evert (ed.); TEMPLETON Doublas M. (ed.)
CORPORATE SOURCE: New York univ. medical cent., nelson inst. environmental medicine, New York NY 10016, United States
McMaster univ., dep. biochemistry, occupational health program, Hamilton ON, Canada
SOURCE: Science of the total environment, (1994), 148(2-3), 191-199, 22 refs.
Conference: 5 Nickel biochemistry, toxicology and ecologic issues. International conference, Sudbury ON (Canada), 7 Sep 1992
ISSN: 0048-9697 CODEN: STENDL
DOCUMENT TYPE: Journal; Conference
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: Netherlands
LANGUAGE: English
AVAILABILITY: INIST-15662, 354000045636730090
AN 1994-0541219 PASCAL
CP Copyright .COPYRGT. 1994 INIST-CNRS. All rights reserved.
AB Nickel treatment of intact cultured cells oxidized dichlorofluorescin to a fluorescent product indicating that nickel elevated the level of oxidants in cells. Nickel also caused an increase in crosslinking of amino acids to DNA and these complexes did not appear to involve the direct participation of Ni.sup.2.sup.+. Histidine, cysteine and tyrosine were prominent among the amino acids crosslinked to DNA. Nickel selectively damaged heterochromatin and this resulted in deletions of heterochromatic regions during nickel carcinogenesis.

Thrombospondin was one of the genes expressed in normal cells that was not expressed in nickel-transformed cells. Other aspects of the molecular mechanism of nickel carcinogenesis are discussed

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 NEWS  9  JAN 30   Saved answer limit increased
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 NEWS 12  FEB 22   Status of current WO (PCT) information on STN
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 NEWS 15  FEB 27   New STN AnaVist pricing effective March 1, 2006
 NEWS 16  FEB 28   MEDLINE/LMEDLINE reload improves functionality
 NEWS 17  FEB 28   TOXCENTER reloaded with enhancements
 NEWS 18  FEB 28   REGISTRY/ZREGISTRY enhanced with more experimental spectral
                   property data
 NEWS 19  MAR 01   INSPEC reloaded and enhanced
 NEWS 20  MAR 03   Updates in PATDPA; addition of IPC 8 data without attributes
 NEWS 21  MAR 08   X.25 communication option no longer available after June 2006
 NEWS 22  MAR 22   EMBASE is now updated on a daily basis

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               AND CURRENT DISCOVER FILE IS DATED 19 DECEMBER 2005.
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accessing the remaining file names entered.
ENTER A FILE NAME OR (IGNORE):ignore
'MEDICONF' IS NOT A VALID FILE NAME
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that are available.  If you have requested multiple files, you can
specify a corrected file name or you can enter "IGNORE" to continue
accessing the remaining file names entered.
ENTER A FILE NAME OR (IGNORE):ignore
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                                                         ENTRY    SESSION
FULL ESTIMATED COST                                       0.21       0.21

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=>  mercuric acetate and fluorescent and interaction and DNA
L1            0 FILE AGRICOLA
L2            2 FILE BIOTECHNO
L3            1 FILE CONFSCI
L4            0 FILE HEALSAFE
L5            0 FILE IMSDRUGCONF
L6            2 FILE LIFESCI
L7            0 FILE PASCAL

TOTAL FOR ALL FILES
L8            5 MERCURIC ACETATE AND FLUORESCENT AND INTERACTION AND DNA

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L9             3 DUP REM L8 (2 DUPLICATES REMOVED)

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L9    ANSWER 1 OF 3  BIOTECHNO  COPYRIGHT 2006 Elsevier Science B.V. on STN
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DUPLICATE
ACCESSION NUMBER: 2000:30051162 BIOTECHNO
TITLE: Transcription activation mediated by the carboxyl-terminal domain of the RNA polymerase α-subunit. Multipoint monitoring using a **fluorescent** probe
AUTHOR: Ozoline O.N.; Fujita N.; Ishihama A.
CORPORATE SOURCE: A. Ishihama, Department of Molecular Genetics, National Institute of Genetics, Mishima, Shizuoka 411-8540, Japan.
E-mail: aishiham@lab.nig.ac.jp
SOURCE: Journal of Biological Chemistry, (2000), 275/2 (1119-1127), 37 reference(s)
CODEN: JBCHA3 ISSN: 0021-9258
DOCUMENT TYPE: Journal; Article
COUNTRY: United States
LANGUAGE: English
SUMMARY LANGUAGE: English
AN 2000:30051162 BIOTECHNO
AB Conformational changes within the carboxyl-terminal domain of the Escherichia coli polymerase α-subunit (α-CTD) upon **interaction** with the **DNA** UP element or the transcription factor cAMP receptor protein (CRP) were studied by monitoring the spectral parameters of a **fluorescent** dye, fluorescein **mercuric acetate**, conjugated to various positions of α-CTD. When fluorescein **mercuric acetate** was conjugated to Cys located on helix I and the loop between helices III and IV, the spectral changes typical for **DNA interaction** were observed for the RNA polymerase-promoter binary complex with UP element-dependent rrnBP1 and the ternary complex with the CRP-dependent uxuAB promoter in the presence of cAMP/CRP. Likewise, the chemical nuclease iron-(p-bromoacetamidobenzyl)-EDTA conjugated to Cys-269 or Cys-272 introduced CRP-dependent cleavage of the uxuAB promoter, as in the case of rrnBP1 (Murakami, K., Owens, J. T., Belyaeva, T. A., Meares, C. F., Bushy, S. J. W., and Ishihama, A. (1997) Proc. Natl. Acad. Sci. U. S. A. 94, 11274- 11278), indicating that CRP rearranges the topology of the **DNA** contact surface in α-CTD. Conformational changes in α-CTD were also observed upon formation of a binary complex with the uxuAB (in the absence of CRP) and factor-independent T7D promoters. The spectral changes suggested that helix IV of α-CTD approaches the negatively charged phosphate moiety of **DNA**. In agreement with this prediction, iron-(p-bromoacetamidobenzyl)-EDTA conjugated to Cys-309 induced extensive **DNA** cleavage upstream from the uxuAB promoter - 35 element. We propose that helix IV of α-CTD is involved in direct **interaction** with some promoters.

L9 ANSWER 2 OF 3 BIOTECHNO COPYRIGHT 2006 Elsevier Science B.V. on STN
DUPLICATE
ACCESSION NUMBER: 1998:28191837 BIOTECHNO
TITLE: Monitoring of RNA polymerase-**DNA** UP element **interaction** by a **fluorescent** probe conjugated to α subunit
AUTHOR: Ozoline O.N.; Fujita N.; Murakami K.; Ishihama A.
CORPORATE SOURCE: A. Ishihama, National Institute of Genetics, Department of Molecular Genetics, Mishima, Shizuoka 411, Japan.
E-mail: aishiham@lab.nig.ac.jp
SOURCE: European Journal of Biochemistry, (15 APR 1998), 253/2 (371-381), 32 reference(s)
CODEN: EJBCAI ISSN: 0014-2956
DOCUMENT TYPE: Journal; Article
COUNTRY: Germany, Federal Republic of
LANGUAGE: English
SUMMARY LANGUAGE: English
AN 1998:28191837 BIOTECHNO
AB The carboxy-terminal domain (CTD) of Escherichia coli RNA polymerase a subunit was specifically modified by a reporter label, fluorescein **mercuric acetate** (FMMA), conjugated to Cys269 on the

surface of UP element recognition helix. The modified enzyme was used to investigate RNA polymerase **interaction** with different promoters, either with or without an UP element. In a single- round transcription assay, the activity of modified RNA polymerase was found to decrease as measured with rrnBP1, trpP and lacP2 promoters but not with many other promoters including mutant rrnBP1 without the UP element, supporting the idea that Cys269 or the domain including Cys269 is involved in UP element recognition. Both trpP and lacP2 have sequence similarity to the rrnBP1 UP element. The chemical modification of RNA polymerase, however, did not affect an apparent equilibrium dissociation constant with rrnBP1, as measured by gel-retardation assays, indicating that the **DNA**-binding ability is retained even after FMMA conjugation. **Interaction** with the rrnBP1 UP element led to substantial alterations in the spectral parameters of the reporter label, which are different from those induced by complex formation with promoters without UP elements. A pronounced spectral blue shift suggests that the labeled surface of aCTD closely approaches the charged UP **DNA** helix. These observations imply that the **fluorescent** labeling at Cys269 can be used as a good tool for monitoring the presence or absence of an UP element in a given promoter. Spectral parameters of the label displayed the spectral blue shift when the modified RNA polymerase interacted with trpP, supporting the prediction that this promoter carries an rrnBP1-type UP element.

L9 ANSWER 3 OF 3 CONFSCI COPYRIGHT 2006 CSA on STN
ACCESSION NUMBER: 78:80091 CONFSCI
DOCUMENT NUMBER: 79020067
TITLE: **Interaction** of a **fluorescent** reagent, fluorescein **mercuric acetate**, with **DNA**
AUTHOR: Takeuchi, S.
SOURCE: Abstracts (Eng) at congress included in registration, after for information: Prof. F. Oosawa, Sec/Gen, 6th Internatl. Biophysics Cong., Dept. of Biophysical Engineering, Osaka Univ., Toyonaka, Osaka 560, Japan..
Meeting Info.: Sixth International Biophysics Congress (783 2027). Kyoto, Japan. 3-9 Sept 78. International Union of Pure and Applied Biophysics.
DOCUMENT TYPE: Conference Article
FILE SEGMENT: DCCP
LANGUAGE: UNAVAILABLE

=> DNA and (fluorescent or fluorescence) and metal and (quenching or quenched or quenches)
L10 0 FILE AGRICOLA
L11 18 FILE BIOTECHNO
L12 0 FILE CONFSCI
L13 0 FILE HEALSAFE
L14 0 FILE IMSDRUGCONF
L15 14 FILE LIFESCI
L16 19 FILE PASCAL

TOTAL FOR ALL FILES
L17 51 DNA AND (FLUORESCENT OR FLUORESCENCE) AND METAL AND (QUENCHING OR QUENCHED OR QUENCHES)

=> l17 and complex
L18 0 FILE AGRICOLA
L19 5 FILE BIOTECHNO
L20 0 FILE CONFSCI
L21 0 FILE HEALSAFE
L22 0 FILE IMSDRUGCONF
L23 7 FILE LIFESCI
L24 6 FILE PASCAL

TOTAL FOR ALL FILES
L25 18 L17 AND COMPLEX

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L26 15 DUP REM L25 (3 DUPLICATES REMOVED)

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on STN
ACCESSION NUMBER: 2005-0173877 PASCAL
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TITLE (IN ENGLISH): Simultaneous binding of meso-tetrakis(N-methylpyridinium-4-yl)porphyrin and 4',6-diamidino-2-phenylindole at the minor grooves of poly(dA)poly(dT) and poly[d(A-T).sub.2] : **Fluorescence** resonance energy transfer between **DNA** bound drugs
AUTHOR: BIAO JIN; HYUN MEE LEE; LEE Young-Ae; JAE HONG KO; KIM Cheol; KIM Seog K.
CORPORATE SOURCE: Department of Chemistry, Yeungnam University, 214-1 Dae-dong, Kyoungsan City, Kyoung-buk, 712-749, Korea, Republic of; Department of Fine Chemistry, Seoul National University of Technology, 172 Kongneung 2-dong, Seoul, 139-743, Korea, Republic of
SOURCE: Journal of the American Chemical Society, (2005), 127(8), 2417-2424, 25 refs.
ISSN: 0002-7863 CODEN: JACSAT
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: United States
LANGUAGE: English
AVAILABILITY: INIST-551, 354000126391500250
AN 2005-0173877 PASCAL
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AB The spectral properties of meso-tetrakis(N-methylpyridinium-4-yl)porphyrin (TMPyP) bound to poly(dA).poly(dT) and poly[d(A-T).sub.2] in the presence and in the absence of 4',6-diamidino-2-phenyl-indole (DAPI) have been studied. DAPI fits deeply into the minor groove of both poly(dA).poly(dT) and poly[d(A-T).sub.2], and TMPyP is also situated at the minor groove. The nature of the absorption, circular dichroism (CD), and flow linear dichroism (LD) spectra of the TMPyP-poly(dA).poly(dT) and -poly[d(A-T).sub.2] **complexes** in the Soret band is essentially unaffected whether the minor groove is blocked by DAPI or not, although small variations been noticed in the presence of DAPI. Furthermore, a close analysis of the reduced LD spectrum in the Soret band results in angles of .eqvsim.80° and 55° between transition moments of the TMPyP and **DNA** helix axes in the absence of DAPI. All these observations indicate that the side of TMPyP whose structure resembles that of classical minor groove binding drugs does not fit deeply into the minor groove. This suggests that TMPyP binds across the minor groove: two positively charged pyridiniumyl rings interact electrostatically with negatively charged phosphate groups of **DNA**. When DAPI and TMPyP are simultaneously bound to poly(dA).poly(dT) or poly[d(A-T).sub.2], the **fluorescence** intensity of DAPI decreases as TMPyP concentration increases, indicating that the excited energy of DAPI is transferred to TMPyP.

L26 ANSWER 2 OF 15 LIFESCI COPYRIGHT 2006 CSA on STN
ACCESSION NUMBER: 2006:25859 LIFESCI
TITLE: Non-cognate Enzyme-**DNA Complex**: Structural and Kinetic Analysis of EcoRV Endonuclease Bound to the EcoRI Recognition Site GAATTC
AUTHOR: Hiller, D.A.; Rodriguez, A.M.; Perona, J.J.
CORPORATE SOURCE: and Interdepartmental Program in Biomolecular Science and Engineering, University of California at Santa Barbara, Santa Barbara, CA 93106-9510, USA; E-mail: perona@chem.ucsb.edu

SOURCE: Journal of Molecular Biology [J. Mol. Biol.], (20051118) vol. 354, no. 1, pp. 121-136.
ISSN: 0022-2836.
DOCUMENT TYPE: Journal
FILE SEGMENT: N
LANGUAGE: English
SUMMARY LANGUAGE: English

AB The crystal structure of EcoRV endonuclease bound to non-cognate **DNA** at 2.0A resolution shows that very small structural adaptations are sufficient to ensure the extreme sequence specificity characteristic of restriction enzymes. EcoRV bends its specific GATATC site sharply by 50 super(o) into the major groove at the center TA step, generating unusual base-base interactions along each individual **DNA** strand. In the symmetric non-cognate **complex** bound to GAATTC, the center step bend is relaxed to avoid steric hindrance caused by the different placement of the exocyclic thymine methyl groups. The decreased base-pair unstacking in turn leads to small conformational rearrangements in the sugar-phosphate backbone, sufficient to destabilize binding of crucial divalent **metal** ions in the active site. A second crystal structure of EcoRV bound to the base-analog GAAUTC site shows that the 50 super(o) center-step bend of the **DNA** is restored. However, while divalent **metals** bind at high occupancy in this structure, one **metal** ion shifts away from binding at the scissile **DNA** phosphate to a position near the 3'-adjacent phosphate group. This may explain why the 10 super(4)-fold attenuated cleavage efficiency toward GAATTC is reconstituted by less than tenfold toward GAAUTC. Examination of **DNA** binding and bending by equilibrium and stopped-flow florescence **quenching** and **fluorescence** resonance energy transfer (FRET) methods demonstrates that the capacity of EcoRV to bend the GAATTC non-cognate site is severely limited, but that full bending of GAAUTC is achieved at only a threefold reduced rate compared with the cognate **complex**. Together, the structural and biochemical data demonstrate the existence of distinct mechanisms for ensuring specificity at the bending and catalytic steps, respectively. The limited conformational rearrangements observed in the EcoRV non-cognate **complex** provide a sharp contrast to the extensive structural changes found in a non-cognate BamHI-**DNA** crystal structure, thus demonstrating a diversity of mechanisms by which restriction enzymes are able to achieve specificity.

L26 ANSWER 3 OF 15 LIFESCI COPYRIGHT 2006 CSA on STN DUPLICATE 1
ACCESSION NUMBER: 2004:104272 LIFESCI
TITLE: Controlled three-dimensional immobilization of biomolecules on chemically patterned surfaces
AUTHOR: Biebricher, A.; Paul, A.; Tinnefeld, P.; Goelzhaeuser, A.; Sauer, M.
CORPORATE SOURCE: Fakultaet fuer Physik, Universitaet Bielefeld, Universitaetsstr. 25, 33615, Bielefeld, Germany; E-mail: goelzhaeuser@physik.uni-bielefeld.de
SOURCE: Journal of Biotechnology [J. Biotechnol.], (20040800) vol. 112, no. 1-2, pp. 97-107. Physics of Single-Molecule Processes and Molecular Recognition in Organic Systems-Fundamental Interdisciplinary Research and its Consequences for Biotechnology.
ISSN: 0168-1656.
DOCUMENT TYPE: Journal
FILE SEGMENT: W3
LANGUAGE: English
SUMMARY LANGUAGE: English

AB We used electron-beam lithography to fabricate chemical nanostructures, i.e. amino groups in aromatic self-assembled monolayers (SAMs) on gold surfaces. The amino groups are utilized as reactive species for mild covalent attachment of fluorescently labeled proteins. Since non-radiative energy transfer results in strong **quenching** of **fluorescent** dyes in the vicinity of the **metal** surfaces, different labeling strategies were investigated. Spacers of varying length were introduced between the gold surface and the fluorescently labeled proteins. First, streptavidin was directly coupled to the amino groups of the SAMs via a glutaraldehyde linker and fluorescently labeled biotin

(X-Biotin) was added, resulting in a distance of similar to 2 nm between the dyes and the surface. Scanning confocal **fluorescence** images show that efficient energy transfer from the dye to the surface occurs, which is reflected in poor signal-to-background (S/B) ratios of similar to 1. Coupling of a second streptavidin layer increases the S/B-ratio only slightly to similar to 2. The S/B-ratio of the **fluorescence** signals could be further increased to similar to 4 by coupling of an additional fluorescently labeled antibody layer. Finally, we introduced tetraethylenepentamine as functional spacer molecule to diminish **fluorescence quenching** by the surface. We demonstrate that the use of this spacer in combination with multiple antibody layers enables the controlled fabrication of highly **fluorescent** three-dimensional nanostructures with S/B-ratios of >20. The presented technique might be used advantageously for the controlled three-dimensional immobilization of single protein or **DNA** molecules and the well-defined assembly of protein **complexes**.

L26 ANSWER 4 OF 15 PASCAL COPYRIGHT 2006 INIST-CNRS. ALL RIGHTS RESERVED. on STN

ACCESSION NUMBER: 2003-0364427 PASCAL
COPYRIGHT NOTICE: Copyright .COPYRGT. 2003 INIST-CNRS. All rights reserved.
TITLE (IN ENGLISH): Signal transduction through dye-labeled M-**DNA** Y-branched junctions: Switching modulated by chemical reduction of anthraquinone
AUTHOR: WETTIG Shawn D.; BARE Grant A.; SKINNER Ryan J. S.; LEE Jeremy S.
CORPORATE SOURCE: Department of Biochemistry, University of Saskatchewan, 107 Wiggins Avenue, Saskatoon, Saskatchewan, S7N 5E5, Canada
SOURCE: Nano letters : (Print), (2003), 3(5), 617-622, 47 refs.
ISSN: 1530-6984
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: United States
LANGUAGE: English
AVAILABILITY: INIST-27369, 354000118028250110
AN 2003-0364427 PASCAL
CP Copyright .COPYRGT. 2003 INIST-CNRS. All rights reserved.
AB **Metal-DNA** (M-**DNA**) is a **complex** formed between duplex **DNA** and divalent **metal** ions which facilitates electron transfer. In this study, 90 base-pair **DNA** Y-branched junctions were prepared with the electron donor fluorescein attached to one arm and electron acceptors, rhodamine or anthraquinone, to the other arms. Upon formation of M-**DNA**, the **fluorescence** of fluorescein was **quenched** by the electron acceptors, demonstrating that electron transfer could occur through the junction. As well, the **quenching** was modulated by chemical reduction of anthraquinone, mimicking a chemical switch. Base-pairing defects at the point of the Junction were observed to have only a small impact on the **quenching**, demonstrating the robust nature of electron transfer in M-**DNA**. Therefore, M-**DNA** may have extraordinary potential for the development of nanoelectronic devices.

L26 ANSWER 5 OF 15 LIFESCI COPYRIGHT 2006 CSA on STN

ACCESSION NUMBER: 2003:18355 LIFESCI
TITLE: Long Range Molecular Wire Behaviour in a **Metal Complex** of **DNA**
AUTHOR: Aich, P.; Skinner, R.J.S.; Wettig, S.D.; Steer, R.P.; Lee, J.S.
CORPORATE SOURCE: Department of Biochemistry, University of Saskatchewan, 107 Wiggins Road, Saskatoon, Saskatchewan, S7N 5E5, Canada
SOURCE: Journal of Biomolecular Structure and Dynamics [J. Biomol. Struct. Dyn.], (20020800) vol. 20, no. 1, pp. 93-98.
ISSN: 0739-1102.
DOCUMENT TYPE: Journal
FILE SEGMENT: N

LANGUAGE: English
SUMMARY LANGUAGE: English
AB M-**DNA** is a **complex** of **metal** ions such as Zn super(2+) with duplex **DNA**. Previous results showed that the **fluorescence** of a donor fluorophore was **quenched** when an acceptor fluorophore was placed at the opposite end of a short M-**DNA** duplex. In order to investigate further the molecular wire behaviour of M-**DNA**, 30-mer duplexes were constructed with fluorescein as donor and rhodamine, pyrene and the cyanine dyes, Cy5 and Cy5.5 as acceptors. Good **quenching** was observed in all cases even though the efficiency of resonance energy transfer was calculated to be < 5%. The distance dependence of **quenching** was investigated by preparing doubly-labelled duplexes ranging in length from 20 to 1,000 base pairs. Upon formation of M-**DNA** significant **quenching** of the **fluorescence** of the donor fluorophore was observed in duplexes up to 500 base pairs in length. The amount of **quenching** decreased with increasing length of the duplexes with a shallow distance dependence. The results are consistent with an electron transfer mechanism in which the electron hops between **metal** centers. This process can occur efficiently over long distances.

L26 ANSWER 6 OF 15 PASCAL COPYRIGHT 2006 INIST-CNRS. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 2002-0052253 PASCAL
COPYRIGHT NOTICE: Copyright .COPYRGT. 2002 INIST-CNRS. All rights reserved.
TITLE (IN ENGLISH): **Fluorescence** spectral study of interaction of water-soluble **metal complexes** of Schiff-base and **DNA**
AUTHOR: LIU Guo-Dong; LIAO Jian-Pei; HUANG Sha-Sheng; SHEN Guo-Li; YU Ru-Qin
CORPORATE SOURCE: College of Chemistry and Chemical Engineering, State Key Laboratory for Chemo/Biosensing and Chemometrics, Hunan University, Changsha, 410082, China; Department of Chemistry, East China Normal University, Shanghai, 200062, China
SOURCE: Analytical sciences, (2001), 17(9), 1031-1036, 31 refs.
ISSN: 0910-6340 CODEN: ANSCEN
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: Japan
LANGUAGE: English
AVAILABILITY: INIST-20879, 354000099280610020
AN 2002-0052253 PASCAL
CP Copyright .COPYRGT. 2002 INIST-CNRS. All rights reserved.
AB The **fluorescence** spectral characteristics and the interaction of several water-soluble **metal complexes** of Schiff-base with **DNA** are described. Among the **complexes** tested, Mn-Schiff-base bound to **DNA** showed a marked decrease in the **fluorescence** intensity with a blue shift of the excitation and emission peaks. Some hypochromism in the UV absorption spectra was also observed. KI **quenching** and competitive binding to **DNA** between Mn-Schiff-base and ethidium bromide (EB) were studied in connection with other experimental observations to show that the interactive model between Mn-Schiff-base and **DNA** is an intercalative one. The pH and salt effect on the **fluorescence** properties was also investigated. The linear relationship between F/F.sub.0 and the concentration of calf thymus **DNA** covers 3.0 x 10.sup.-.sup.6- 2 x 10.sup.-.sup.4 mol L.sup.-.sup.1, which can be utilized for determining traces of calf thymus **DNA** with a detection limit of 8.0 x 10.sup.-.sup.7 mol L.sup.-.sup.1 in base pairs.

L26 ANSWER 7 OF 15 PASCAL COPYRIGHT 2006 INIST-CNRS. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 2001-0218136 PASCAL
COPYRIGHT NOTICE: Copyright .COPYRGT. 2001 INIST-CNRS. All rights reserved.
TITLE (IN ENGLISH): Interaction of **metal complexes** of

bis(salicylidene)-ethylenediamine with **DNA**
AUTHOR: LIU Guo-Dong; YANG Xin; CHEN Zeng-Ping; SHEN Guo-Li; YU Ru-Qin
CORPORATE SOURCE: College of Chemistry and Chemical Engineering, Institute for Chemometrics and Sensing Technology, Hunan University, Changsha, 410082, China
SOURCE: Analytical sciences, (2000), 16(12), 1255-1259, 24 refs.
ISSN: 0910-6340 CODEN: ANSCEN
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: Japan
LANGUAGE: English
AVAILABILITY: INIST-20879, 354000094161090030
AN 2001-0218136 PASCAL

AB The **fluorescence** spectral characteristics and interaction of several **metal complexes** of bis(salicylidene)ethylenediamine (salen) with **DNA** are described. Among the **complexes** tested, Co-salen bound to **DNA** showed a marked decrease in the **fluorescence** intensity with a bathochromic shift of the excitation and emission peaks. A hypochromism in the UV absorption spectra was also observed. KI **quenching** and competitive binding to **DNA** between Co-salen and ethidium bromide were studied in connection with other experimental observations to show that the interactive model between Co-salen and **DNA** is an intercalative one. The pH and salt effect on the **fluorescence** properties was also investigated. The intrinsic binding constant and the binding site number were estimated to be 5.76 x 106 mol L.sup.-.sup.1 in base pairs and 0.058, respectively. A linear elationship between F/F.sub.0 and the concentration of calf thymus **DNA** covers 1.0 x 10.sup.-.sup.6 - 5 x 10.sup.-.sup.4 mol L.sup.-.sup.1, which can be utilized for determining traces of calf thymus **DNA** with a detection limit of 4.6 x 10.sup.-.sup.7 mol L.sup.-.sup.1 in base pairs.

L26 ANSWER 8 OF 15 LIFESCI COPYRIGHT 2006 CSA on STN
ACCESSION NUMBER: 2000:106858 LIFESCI
TITLE: M-**DNA**: pH Stability, Nuclease Resistance and Signal Transmission
AUTHOR: Aich, P. [editor]; Kraatz, H.-B. [editor]; Lee, J.S. [editor]; R.H. Sarma [editor]; M.H. Sarma [editor]
CORPORATE SOURCE: Department of Biochemistry, Department of Chemistry, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 5E5, Canada; E-mail: leejs@sask.usask.ca
SOURCE: Journal of Biomolecular Structure and Dynamics, (20000328) vol. 11, no. 2, pp. 297-301.
Meeting Info.: Proc. 11th Conversation in Biomolecular Stereodynamics. Albany,NY (USA). 15-19 Jun 2000.
ISSN: 0739-1102.
DOCUMENT TYPE: Journal
TREATMENT CODE: Conference
FILE SEGMENT: N
LANGUAGE: English
SUMMARY LANGUAGE: English
AB In the presence of divalent **metal** ions (Zn super(2+), Co super(2+), and Ni super(2+)) and at pHs above 8, duplex **DNA** forms a **complex** called M-**DNA**. M-**DNA** can be converted back to B-**DNA** by addition of EDTA or lowering the pH. The stability of M-**DNA** depends on the **metal** ion and/or the sequence of **DNA**. For calf thymus **DNA** the order of stability with decreasing pH is: Ni super(2+)> Co super(2+)>Zn super(2++). The interconversion with B-**DNA** shows hysteresis; once formed Ni-M-**DNA** remains stable for more than one hour at pH 7, but conversion of B-**DNA** to M-**DNA** is slow at pHs below 8. Among synthetic sequences, poly[d(AT)] does not form M-**DNA** whereas the phosphorothioate analogues form only at pH 9.0. In contrast, the Ni-M-**DNA** form of poly[d(GC)] is stable even at pH 6.5. Ni-M-**DNA** is resistant to cleavage by DNase I whereas B-**DNA** is

digested rapidly under identical conditions. The Co super(2+) and Ni super(2+) forms of M-**DNA** were paramagnetic with increased mass susceptibilities (chi) compared to other **metal** **complexes**. Signal transmission in M-**DNA** was tested by constructing duplexes of 54 base pairs with fluorescein (donor) at one end and rhodamine (acceptor) at the other. **Quenching** of fluorescein **fluorescence** was observed for the Zn super(2+) form of M-**DNA** only when the **DNA** was labeled with both donor and acceptor. Therefore, the pathway of **quenching** maybe via electron transfer. Taken together, these results suggest that M-**DNA** is a distinct conformation with tightly bound **metal** ions, and certain forms may be stable under physiological conditions. Furthermore, M-**DNA** may be used as a molecular wire for signal transmission over long distances.

L26 ANSWER 9 OF 15 PASCAL COPYRIGHT 2006 INIST-CNRS. ALL RIGHTS RESERVED. on STN

ACCESSION NUMBER: 2000-0077723 PASCAL
COPYRIGHT NOTICE: Copyright .COPYRGT. 2000 INIST-CNRS. All rights reserved.
TITLE (IN ENGLISH): A novel method for determination of **DNA** by use of molecular 'Light Switch' **complex** of Ru(bipy).sub.2(dppx).sup.2.sup.+
AUTHOR: LING L.-S.; HE Z.-K.; SONG G.-W.; DIN YUAN; ZENG Y.-E.
CORPORATE SOURCE: Department of Chemistry, Wuhan University, Wuhan 430072, China
SOURCE: Analytica chimica acta, (2000), 403(1-2), 209-217, 28 refs.
ISSN: 0003-2670 CODEN: ACACAM
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: Netherlands
LANGUAGE: English
AVAILABILITY: INIST-3950, 354000081430430240
AN 2000-0077723 PASCAL
CP Copyright .COPYRGT. 2000 INIST-CNRS. All rights reserved.
AB A novel fluorimetric method was developed for selective determination of **DNA** with the molecular Light Switch' **complex** of Ru(bipy).sub.2(dppx).sup.2.sup.+. The maximum **fluorescence** intensity was produced in the pH range of 9.3-11.5, and the maximum excitation and emission wavelengths were 467 and 595 nm, respectively. Under the optimum conditions, the **fluorescence** intensity was in proportion to the concentration of **DNA**. The linear range for calfthymus **DNA**, Salmon sperm **DNA** and Herring sperm **DNA** were 0-0.4, 0-0.35 and 0-0.4 μg/ml, respectively. The limits of detection for Calfthymus **DNA**, Salmon sperm **DNA** and Herring sperm **DNA** were 0.75, 0.66 and 1.49, respectively. A satisfactory result was obtained when the proposed method was used to determine **DNA** in the presence of some coexisting substances.

L26 ANSWER 10 OF 15 BIOTECHNO COPYRIGHT 2006 Elsevier Science B.V. on STN DUPLICATE

ACCESSION NUMBER: 1999:29570567 BIOTECHNO
TITLE: M-**DNA**: A **complex** between divalent **metal** ions and **DNA** which behaves as a molecular wire
AUTHOR: Aich P.; Labiuk S.L.; Tari L.W.; Delbaere L.J.T.; Roesler W.J.; Falk K.J.; Steer R.P.; Lee J.S.
CORPORATE SOURCE: J.S. Lee, Department of Biochemistry, University of Saskatchewan, 107 Wiggins Road, Saskatoon, Sask. S7N 5E5, Canada.
E-mail: leejs@sask.usask.ca
SOURCE: Journal of Molecular Biology, (26 NOV 1999), 294/2 (477-485), 34 reference(s)
CODEN: JMOBAK ISSN: 0022-2836
DOCUMENT TYPE: Journal; Article
COUNTRY: United Kingdom
LANGUAGE: English

SUMMARY LANGUAGE: English
AN 1999:29570567 BIOTECHNO
AB M-**DNA** is a **complex** of **DNA** with divalent **metal** ions (Zn.sup.2.sup.+, Co.sup.2.sup.+, or Ni.sup.2.sup.+) which forms at pH conditions above 8. Upon addition of these **metal** ions to B-**DNA** at pH 8.5, the pH decreases such that one proton is released per base-pair per **metal** ion. Together with previous NMR data, this result demonstrated that the imino proton in each base-pair of the duplex was substituted by a **metal** ion and that M-**DNA** might possess unusual conductive properties. Duplexes of 20 base-pairs were constructed with fluorescein (donor) at one end and rhodamine (acceptor) at the other. Upon formation of M-**DNA** (with Zn.sup.2.sup.+) the **fluorescence** of the donor was 95% **quenched**. **Fluorescence** lifetime measurements showed the presence of a very fast component in the decay kinetics with $\tau <= 10$ ps. The fast component was absent in B- **DNA** and in M-**DNA** lacking an acceptor chromophore; a result which is only consistent with electron transfer. Efficient signal transduction was also observed between the two fluorophores separated by 54 base-pairs (over 150 Å) in an M-**DNA** duplex. The addition of a sequence-specific **DNA**-binding protein prevented the flow of electrons and this was reversed by protease digestion. Therefore, M-**DNA** behaves as a molecular wire and could be manipulated to prepare self-assembling electronic circuits.

L26 ANSWER 11 OF 15 BIOTECHNO COPYRIGHT 2006 Elsevier Science B.V. on STN
ACCESSION NUMBER: 1998:28460815 BIOTECHNO
TITLE: Interaction of the copper(II) macrocyclic **complexes** with **DNA** studied by **fluorescence quenching** of ethidium
AUTHOR: Liu C.; Zhou J.; Xu H.
CORPORATE SOURCE: C. Liu, Department of Chemistry, Huazhong Univ. of Science/Technology, Wuhan 430074, China.
E-mail: 120919@public.wh.hb.cn
SOURCE: Journal of Inorganic Biochemistry, (1998), 71/1-2 (1-6), 28 reference(s)
CODEN: JIBIDJ ISSN: 0162-0134
PUBLISHER ITEM IDENT.: S0162013498100259
DOCUMENT TYPE: Journal; Article
COUNTRY: United States
LANGUAGE: English
SUMMARY LANGUAGE: English
AN 1998:28460815 BIOTECHNO
AB The **fluorescence quenching** of **DNA** bound ethidium ion by copper(II) macrocyclic **complexes** has been investigated. The binding constant indicates that the stable assembly can be formed between the **DNA** and the **metal complex**. The replacement of the fluorophore by the **metal complexes** results in a decrease of the ethidium moles intercalating to the molar **DNA** base pair and the binding constant of the ethidium to the **DNA**. The **quenching** of the ethidium excited state by the Cu(II) **complex** follows linear Stern-Volmer behavior. The **quenching** constant decreases regularly with an increase of the ratio of the concentration of the bound ethidium to that of **DNA** base pair. The dependence of the **quenching** constant on the ratio can be used to estimate binding constants for the **fluorescent** molecule and **metal complexes** to **DNA**. This method does not depend strongly on the type and the extent of interaction of **metal complexes** with **DNA**, allowing for the determination of binding constants for **metal complexes** that exhibit small changes in absorption spectra upon binding. The precision of this method will ultimately be governed by outstanding agreement between the **quenching** constant measured and that calculated by using a correlation function of the ratio or the **DNA** bound concentration of ethidium with **quenching** constant.

L26 ANSWER 12 OF 15 BIOTECHNO COPYRIGHT 2006 Elsevier Science B.V. on STN
ACCESSION NUMBER: 1997:27057002 BIOTECHNO

TITLE: The tyrosine photophysics of a primase-derived peptide are sensitive to the peptide's zinc-bound state: Proof that the bacterial primase hypothetical zinc finger sequence binds zinc
AUTHOR: Griep M.A.; Adkins B.J.; Hromas D.; Johnson S.; Miller J.
CORPORATE SOURCE: M.A. Griep, Department of Chemistry, Center for Biotechnology, University of Nebraska, Lincoln, NE 68588-0304, United States.
SOURCE: Biochemistry, (1997), 36/3 (544-553), 59 reference(s) CODEN: BICHAW ISSN: 0006-2960
DOCUMENT TYPE: Journal; Article
COUNTRY: United States
LANGUAGE: English
SUMMARY LANGUAGE: English
AN 1997:27057002 BIOTECHNO
AB A 35-amino acid peptide corresponding to the putative 'zinc finger' sequence of primase was prepared to study its zinc binding properties. When zinc was added to the peptide, it was found that the **fluorescence** quantum yield of the single tyrosine increased by 46% and the average lifetime by 34%. The binding stoichiometry was one zinc per peptide. Below pH 6.0 and above pH 8.5, the zinc-peptide binding affinity was less than 1 μM and could be accurately determined. Interpolation from those binding constants suggested that the affinity at pH 7.5 was between 10 and 100 nM. The absorption spectrum of the cobalt(II)-peptide **complex** was consistent with tetrahedral **metal** coordination by three sulfur and one imidazole nitrogen ligands. The peptide affinity for cobalt was less than for zinc, indicating **metal** specificity. Analysis of the **fluorescence** intensity pH profile, circular dichroism spectra, the effect of extrinsic quenchers indicated that at neutral pH (1) the free peptide folded up into a structure to place the tyrosine in an environment protected from solvent, (2) the peptide bound zinc via its three cysteines and one of its histidines resulting in little change to the polypeptide secondary structure or to the tyrosine solvent accessibility, and (3) when the peptide bound zinc, it bound directly to or caused the immobilization of the groups that had been intramolecularly collisionally **quenching** the tyrosine which resulted in the observed increases in tyrosine quantum yield and lifetime.

L26 ANSWER 13 OF 15 LIFESCI COPYRIGHT 2006 CSA on STN
ACCESSION NUMBER: 97:28875 LIFESCI
TITLE: Studies of Co-bleomycin A2 green: Its detailed structural characterization by NMR and molecular modeling and its sequence-specific interaction with **DNA** oligonucleotides
AUTHOR: Wu, W.; Vanderwall, D.E.; Lui, S.M.; Tang, Xue-Jun; Turner, C.J.; Kozarich, J.W.; Stubbe, J.*
CORPORATE SOURCE: Deps. Chem. and Biol., Massachusetts Inst. Technol., Cambridge, MA 02139, USA
SOURCE: J. AM. CHEM. SOC., (1996) vol. 118, no. 6, pp. 1268-1280. ISSN: 0002-7863.
DOCUMENT TYPE: Journal
FILE SEGMENT: N
LANGUAGE: English
SUMMARY LANGUAGE: English
AB The structure of homogeneous Co-Bleomycin (CoBLM) A2 green (the hydroperoxide form of CoBLM) has been determined using 2D NMR methods and molecular dynamics calculations. Previous studies of Xu et al. reported several possible structures for CoBLM A2 green compatible with their NMR data acquired on a mixture of CoBLM A2 green and A2 brown forms. The availability of the pure CoBLM A2 green, which is stable for months at neutral pH, has allowed the complete assignments of the super(1)H and super(13)C chemical shifts, observation of 55 intramolecular NOEs, and determination of 15 coupling constants allowing the definition of dihedral angles. These results are a prerequisite to determining its structure with duplex **DNA** of a defined sequence. Two screw sense isomers each containing two possible axial ligands (the primary amine of the beta -aminoalanine and the carbamoyl nitrogen of the mannose) were considered

as viable candidates for the structure of CoBLM A2 green. Using the NMR constraints and molecular dynamics calculations, the structures of all four isomers were generated. One set of screw sense isomers can be readily eliminated from considerations based on violations of NOE and dihedral angle constraints. The other screw sense isomer containing either one or the other of the postulated axial ligands has been examined in some detail. The structure containing the primary amine of beta -aminoalanine as the axial ligand is favored on the basis of coupling constants and NOE arguments, potential energy considerations, model studies, and studies with analogs of BLM. The favored structure is compact with the bithiazole moiety folded back underneath the equatorial plane of the **metal** binding domain, on the same face as the hydroperoxide ligand. The geometry of the peptide linker is very well defined by the observed coupling constants in the valeryl and threonine moieties of the linker. CoBLM A2 green has been studied with two self-complementary oligonucleotides, d(CCAGGCCTGG) and d(CCAGTACTGG). Both of these oligomers possess a single, UV light-mediated cleavage site (C and T, respectively). In addition, **fluorescent quenching** studies have allowed the determination of the first sequence-specific dissociation constants of 1.7 x 10 super(-7) and 1.5 x 10 super(-7) M, respectively. Titration of CoBLM A2 green with each of these oligomers reveals a 1:1 **complex** in slow exchange on the NMR time scale. The upfield shifts of the bithiazole protons in both of these **complexes** are indicative of a partial intercalative mode of binding. The stage is now set for the determination of the structure of the CoBLM A2 green bound sequence specifically to **DNA**.

L26 ANSWER 14 OF 15 BIOTECHNO COPYRIGHT 2006 Elsevier Science B.V. on STN
DUPLICATE
ACCESSION NUMBER: 1995:25251645 BIOTECHNO
TITLE: Enhancement of aromatic amino acid-nucleic acid base stacking interaction by **metal** coordination to base: **Fluorescence** study on a tryptophan-Pt(II)-guanine ternary **complex**
AUTHOR: Kawai H.; Tarui M.; Doi M.; Ishida T.
CORPORATE SOURCE: Department of Physical Chemistry, Osaka University Pharmaceutical Sci., 2-10-65 Kawai,Matsubara, Osaka 580, Japan.
SOURCE: FEBS Letters, (1995), 370/3 (193-196)
CODEN: FEBLAL ISSN: 0014-5793
DOCUMENT TYPE: Journal; Article
COUNTRY: Netherlands
LANGUAGE: English
SUMMARY LANGUAGE: English
AN 1995:25251645 BIOTECHNO
AB In order to investigate the effect of the Pt(II) ion on the stacking interaction between tryptophan and a guanine base, the **quenching** of Trp **fluorescence** was monitored for some systems in the absence and presence of the **metal** ion, and the association constants were obtained by the analysis of Eadie-Hofstee plots. All spectral data suggested that the stacking interaction is enhanced by the Pt(II)) coordination to the guanine N7 atom. The result indicates the importance of the **metal** ion as a bookmark in the specific recognition of a nucleic acid base by an aromatic amino acid residue.

L26 ANSWER 15 OF 15 BIOTECHNO COPYRIGHT 2006 Elsevier Science B.V. on STN
ACCESSION NUMBER: 1981:11100023 BIOTECHNO
TITLE: Copper(I)-bleomycin. A structurally unique oxidation-reduction active **complex**
AUTHOR: Oppenheimer N.J.; Chang C.; Rodriguez L.O.; Hecht S.M.
CORPORATE SOURCE: Dept. Pharmaceut. Chem., Univ. California, San Francisco, Calif. 94143, United States.
SOURCE: Journal of Biological Chemistry, (1981), 256/4 (1514-1517)
CODEN: JBCHA3
DOCUMENT TYPE: Journal; Article
COUNTRY: United States
LANGUAGE: English
AN 1981:11100023 BIOTECHNO

AB Cu(I) and Cu(II) form stable 1:1 **complexes** with bleomycin (BLM). The affinity of both **metals** for the drug is greater than that of Fe(II). Cu(I)-BLM A.sub.2 binds to calf thymus **DNA** with about the same affinity as Fe(II)-BLM, as judged by **DNA**-induced **fluorescence quenching** of the bithiazole moiety of BLM. Based on .sup.1H NMR and potentiometric titration data, the Cu(I) **complexes** of BLM are shown to have geometries very different than those of other BLM-**metal**(II) **complexes** studied thus far. As Cu(I)-BLM is oxidation-reduction active, its geometry is of importance in defining the structural requirements for BLM activity.

on STN
ACCESSION NUMBER: 1989-0276957 PASCAL
TITLE (IN ENGLISH): Air **pollution** in an arid **environment** : The effects of **copper** smelting on the U.S.-Mexico border region
TITLE (IN FRENCH): Pollution de l'air dans un milieu aride : Les effets de la fusion du cuivre sur la region de bordure Mexique-Etats Unis
AUTHOR: VARADY R.G.
CORPORATE SOURCE: Univ. Arizona, off. arid land studies, Tucson, United States
SOURCE: (1988), 1277-1286, 1 tabl., refs. 2 p.
Conference: Arid lands today and tomorrow; International research and development conference, Tucson, 20 Oct 1985
Published by: Belhaven, London
Table; Illustrations
DOCUMENT TYPE: Conference
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: United Kingdom
LANGUAGE: English
AVAILABILITY: BRGM-11645
AN 1989-0276957 PASCAL

L26 ANSWER 4 OF 10 LIFESCI COPYRIGHT 2006 CSA on STN
ACCESSION NUMBER: 88:104847 LIFESCI
TITLE: Effect of heavy metal ions on microorganism aging.
AUTHOR: Pisanti, F.A.; Lucadamo, L.; Vanzanell, F.; Aloj Totaro, E.
CORPORATE SOURCE: Univ. Calabria, Dip. Ecol., 87030 Arcavata de Rende, Cosenza, Italy
SOURCE: MAR. POLLUT. BULL., (1988) vol. 19, no. 7, pp. 328-333.
DOCUMENT TYPE: Journal
FILE SEGMENT: K; A
LANGUAGE: English
AB It is known that the presence of copper in the marine mycete Corollospora maritima culture medium enhances growth and lipofuscin production. The latter is a fluorescent pigment known as "age pigment". It appeared that the determination of lipofuscin, both by the thiobarbituric acid test and by measuring the fluorescence on extract in chloroform/methanol, could serve as a marker of the presence and the level of **copper pollution** of sea **environments**. In addition to **copper**, almost all other transition metals contain unpaired electrons and can thus qualify as radicals. All the transition metals induce lipofuscinogenesis in Corollospora maritima . Lipofuscin could be an indicator of environmental contamination by these metals.

L26 ANSWER 5 OF 10 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2006) on STN DUPLICATE 2
ACCESSION NUMBER: 82:78020 AGRICOLA
DOCUMENT NUMBER: IND82055866
TITLE: **Copper**, lead, and zinc **pollution** of soil **environment** India.
AUTHOR(S): Haque, M.A.; Subramanian, V.
AVAILABILITY: DNAL (QH545.A1C7)
SOURCE: CRC critical reviews in environmental control., 1982 Vol. 12, No. 1. p. 13-68
Publisher: Boca Raton, Fla., CRC Press.
ISSN: 0007-8999
NOTE: Includes 256 ref.
DOCUMENT TYPE: Article
FILE SEGMENT: U.S. Imprints not USDA, Experiment or Extension
LANGUAGE: English

L26 ANSWER 6 OF 10 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2006) on STN

ACCESSION NUMBER: 82:142803 AGRICOLA
DOCUMENT NUMBER: IND82113278
TITLE: Age accumulation of **copper** and cadmium in wild populations of small mammals Environmental **pollution**. Heavy metals in the **environment** : International Conference, Amsterdam, September 1981.
AUTHOR(S): Hunter, B.A.; Johnson, M.S.; Thompson, D.J.; Holden, H.
AVAILABILITY: DNAL (TD196.M4I57 1981)
SOURCE: Heavy Met Environ, 1981 p. 263-266
Publisher: Edinburgh, U. K. : CEP Consultants, 1981.
ISBN: 0905941047.
NOTE: 13 ref.
DOCUMENT TYPE: Article
FILE SEGMENT: Non-U.S. Imprint other than FAO
LANGUAGE: English

L26 ANSWER 7 OF 10 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2006) on STN
ACCESSION NUMBER: 82:124578 AGRICOLA
DOCUMENT NUMBER: IND82098419
TITLE: Influence of **copper** industry on degree of **environment pollution** with heavy metals Poland.
Wplyw hutnictwa miedzi na stopien skazenia metalami ciezkimi srodowiska przyrodniczego.
AUTHOR(S): Pacyna, J.; Zwozdziak, J.; Zwozdziak, A.
AVAILABILITY: DNAL (20.5 P84)
SOURCE: Postepy nauk rolniczych., 1981 Vol. 28 p. 127-134 ill
Publisher: Warszawa, Poland, Panstwowe Wydawn. Rolnicze i Lesne.
ISSN: 0032-5457
NOTE: 7 ref.
DOCUMENT TYPE: Article
FILE SEGMENT: Non-U.S. Imprint other than FAO
LANGUAGE: Polish

L26 ANSWER 8 OF 10 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2006) on STN
ACCESSION NUMBER: 78:196812 AGRICOLA
DOCUMENT NUMBER: 78-9177925
TITLE: **Copper** in the marine **environment**. II. [**Pollution**]
AUTHOR(S): Schmidt, R L
AVAILABILITY: DNAL (QH545.A1C7)
SOURCE: CRC Crit Rev Environ Control (Chem Rubber Co), 1978 Vol. 8, No. 3, pp. 247-291. Ref.
DOCUMENT TYPE: Journal; Article; General Review; Bibliography
LANGUAGE: English

L26 ANSWER 9 OF 10 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2006) on STN
ACCESSION NUMBER: 78:196813 AGRICOLA
DOCUMENT NUMBER: 78-9177926
TITLE: **Copper** in the marine **environment**. I. [**Pollution**]
AUTHOR(S): Schmidt, R L
AVAILABILITY: DNAL (QH545.A1C7)
SOURCE: CRC Crit Rev Environ Control (Chem Rubber Co), 1978 Vol. 8, No. 2, pp. 101-152. Ref.
DOCUMENT TYPE: Journal; Article; General Review; Bibliography
LANGUAGE: English

L26 ANSWER 10 OF 10 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2006) on STN

ACCESSION NUMBER: 78:85430 AGRICOLA
DOCUMENT NUMBER: 78-9063250
TITLE: Certain problems of the impact of copper industry upon forest **environment** in the Legnica-Glogow **Copper** District [Injuries due to air and soil **pollution**]
Niektore zagadnienia wplywu przemyslu miedziowego na srodowisko lesne w Legnicko-Glogowskim Okregu Miedziowym
AUTHOR(S): Duda, S
AVAILABILITY: DNAL (99.8 SY52)
SOURCE: Sylwan, Oct 1977 Vol. 121, No. 10, pp. 39-45. Ref.
DOCUMENT TYPE: Journal; Article
LANGUAGE: Polish

CORPORATE SOURCE: Chemical Institute, Catholic University of Valparaiso, Post Office Box 4059, Valparaiso, Chile
SOURCE: Bulletin of Environmental Contamination and Toxicology [Bull. Environ. Contam. Toxicol.], (20020000) vol. 69, no. 1, pp. 139-146.
ISSN: 0007-4861.
DOCUMENT TYPE: Journal
FILE SEGMENT: X
LANGUAGE: English
AB Selenium (Se) toxicity in aquatic ecosystems has been the subject of extensive studies during the last decade. Atmospheric emissions from coal power plants and **copper** refineries may lead to Se deposition into aquatic systems. Congenital malformations as well as **cancer** in birds and fish have been detected in lakes contaminated by Se (Ohlendorf et al. 1988 and 1990; Saiki et al. 1993; Welsh and Maughan 1994; Lemly 1995; Schultz and Hermanutz 1990; Hermanutz 1992; Lemly 1993). The fact that Se can bioaccumulate and biomagnify further increases the risk of ecotoxicity (Maier and Knight 1994).

L9 ANSWER 8 OF 13 HEALSAFE COPYRIGHT 2006 CSA on STN DUPLICATE 3
ACCESSION NUMBER: 1999:785 HEALSAFE
TITLE: Angular and fibrous particles in lung in relation to silica-induced diseases
AUTHOR: Dufresne, A.; Begin, R.; Dion, C.; Jagirdar, J.; Rom, W.N.; Loosereewanich, P.; Muir, D.C.F.; Ritchie, A.C.; Perrault, G.
CORPORATE SOURCE: McGill University, Department of Occupational Health, Faculty of Medicine, 3450 University Street, Suite 22, Montreal, Quebec H3A 2A7, Canada
SOURCE: Int. Arch. Occup. Environ. Health, (19980600) vol. 71, no. 4, pp. 263-269.
ISSN: 0340-0131.
DOCUMENT TYPE: Journal
FILE SEGMENT: H
LANGUAGE: English
SUMMARY LANGUAGE: English
AB Introduction: The lung concentration of angular and fibrous particles was measured in cases of lung fibrosis only, in cases of lung fibrosis and lung **cancer**, and in cases of lung **cancer** only. These patients worked in different trades (mining, foundries, construction and were not a homogeneous group of exposed workers. Material and methods: Particles, both angular and fibrous, were extracted from lung parenchyma by a bleach digestion method, mounted on **copper** microscopic grids by a carbon replica technique, and analyzed by transmission electron microscopy (TEM) and energy-dispersive spectroscopy (EDS). The quartz concentration was also determined by X-ray diffraction (XRD) on a silver membrane filter after extraction from the lung parenchyma. Results: (1) Lung **cancer** and lung fibrosis cases retained more metal-rich particles ($P = 0.02$) and more angular particles of all sorts ($P = 0.009$) than did lung fibrosis cases only, and the differences were statistically significant. (2) However, more quartz was retained in the lungs in lung fibrosis cases than in lung fibrosis or lung **cancer** cases, but the difference in the concentrations was not statistically significant. (3) More ferruginous bodies were retained in the lungs in lung **cancer** and lung fibrosis cases than in cases of lung fibrosis only, and the difference in the concentrations was statistically significant ($P = 0.02$). Conclusion: Results obtained from lung tissue must always be interpreted cautiously. However, these results are consistent with the hypothesis that workers in some trades such as foundries were exposed not only to quartz but also to asbestos, ceramic fibers, metal-rich non fibrous particles, and other likely carcinogenic chemicals. The wide range of particle types identified in the lungs of these workers illustrates the complexity of trying to determine disease origins in these work **environments**. Epidemiology studies have to control for the exposure to these carcinogens as well as for smoking habits.

L9 ANSWER 9 OF 13 HEALSAFE COPYRIGHT 2006 CSA on STN DUPLICATE 4
ACCESSION NUMBER: 1999:782 HEALSAFE
TITLE: Update of **cancer** incidence among workers at a

copper/nickel smelter and nickel refinery
AUTHOR: Anttila, A.; Pukkala, E.; Aitio, A.; Rantanen, T.; Karjalainen, S.
CORPORATE SOURCE: Finnish Cancer Registry, Liisankatu 21 B, FIN-00170 Helsinki, Finland
SOURCE: Int. Arch. Occup. Environ. Health, (19980600) vol. 71, no. 4, pp. 245-250.
ISSN: 0340-0131.
DOCUMENT TYPE: Journal
FILE SEGMENT: H
LANGUAGE: English
SUMMARY LANGUAGE: English
AB Objectives: To assess **cancer** risk among nickel-exposed workers. Methods: We updated **cancer** incidence among 1388 workers employed for at least 3 months at a **copper**/nickel smelter and nickel refinery in Harjavalta, Finland. There were 1155 workers exposed to nickel during the period 1960-1985 in the smelter (566 workers), repair shop (239 workers), or refinery (418 workers). **Cancer** incidence was followed through the files of the Finnish **Cancer** Registry up to 31 December 1995. For overall **cancer** and for a priori selected specific **cancer** types the ratio of observed to expected numbers of cases was computed as a standardized incidence ratio (SIR), controlled for age, gender, and calendar period and using the region-specific rates as a reference. Results: The overall **cancer** incidence among both nickel-exposed and unexposed subcohorts was at the expected level. A small increase in lung **cancer** incidence, which reached statistical significance among workers with a latency exceeding 20 years, was observed among the smelter workers exposed to insoluble nickel compounds. Among workers in the refinery, who were exposed primarily to nickel sulfate at levels below 0.5 mg/m super(3) as well as to low concentrations of other nickel compounds, there was an increased risk for nasal **cancer** (SIR 41.1, 95% CI 4.97-148), positively associated with latency and duration of employment, and an excess risk for stomach (SIR 4.98, 95% CI 1.62-11.6) and lung (SIR 2.61, 95% CI 0.96-5.67) **cancers**. Conclusions: Since elevated nasal and lung **cancer** risks were confined to the refinery, where the primary exposure was to nickel sulfate, it is likely that nickel sulfate is mainly responsible for the elevated respiratory **cancer** risk. We cannot rule out whether the excess stomach **cancer** risk is a chance finding, or related to the working **environment**.

L9 ANSWER 10 OF 13 BIOTECHNO COPYRIGHT 2006 Elsevier Science B.V. on STN
ACCESSION NUMBER: 1998:28110745 BIOTECHNO
TITLE: Health impact of polychlorinated dibenzo-p-dioxins: A critical review
AUTHOR: Mukerjee D.
CORPORATE SOURCE: Dr. D. Mukerjee, Natl. Ctr. for Environ. Assessment, US Environmental Protection Agency, Cincinnati, OH 45268, United States.
SOURCE: Journal of the Air and Waste Management Association, (1998), 48/2 (157-165), 126 reference(s)
CODEN: JIJME4 ISSN: 1047-3289
DOCUMENT TYPE: Journal; Conference Article
COUNTRY: United States
LANGUAGE: English
SUMMARY LANGUAGE: English
AN 1998:28110745 BIOTECHNO
AB Polychlorinated dibenzo-p-dioxins (PCDDs), commonly known as dioxins, form as unwanted impurities in the manufacturing of chlorophenol and its derivatives - pulp and paper - and in the combustion of municipal, sewage- sludge, hospital, and hazardous waste. Combustion, in presence of a chlorine donor, seems to be a major source of these compounds. High levels of dioxins are also emitted from metallurgical industries including **copper** smelters, electric furnaces in steel mills, and wire reclamation incinerators. Trace levels are detectable in emissions from motor vehicles using leaded gasoline or diesel fuel, in forest fires, and in residential wood burning. Extremely persistent and widely distributed in the **environment**, PCDDs have been detected in all three primary and many secondary media. Releases into the air

occur mainly from combustor emissions. Atmospheric dispersion, deposition, and subsequent accumulation in the food chain seem to be the major pathways of exposure to the general population. Residues of these chemicals have been detected in soil, sediment, fish, meat, cow's milk, human adipose tissue, and mothers' milk. In general, these chemicals have high lipophilicity. The elimination half-life of 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) in humans is approximately 7-11 years. Very little human toxicity data from exposure to PCDDs are available. Health-effect data obtained from occupational settings in humans are based on exposure to chemicals contaminated with TCDD. It produces a spectrum of toxic effects in animals and is one of the most toxic chemicals known. Most of the toxicity data available on TCDD are from high- dose oral exposures to animals. Very few percutaneous and no inhalation exposure data are available in the literature. There is a wide range of difference in sensitivity to PCDD lethality in animals. The signs and symptoms of poisoning with chemicals contaminated with TCDD in humans are analogous to those observed in animals. Dioxin exposures to humans are associated with increased risk of severe skin lesions such as chloracne and hyperpigmentation, altered liver function and lipid metabolism, general weakness associated with drastic weight loss, changes in activities of various liver enzymes, depression of the immune system, and endocrine- and nervous-system abnormalities. It is a potent teratogenic and fetotoxic chemical in animals. A very potent promoter in rat liver carcinogenesis, TCDD also causes **cancers** of the liver and other organs in animals. Populations occupationally or accidentally exposed to chemicals contaminated with dioxin have increased incidences of soft-tissue sarcoma and non-Hodgkin's lymphoma. No comprehensive studies have been conducted to determine any health impact to the general population from environmental exposure to PCDDs. This paper presents a brief review of relevant animal and human data for projecting any possible health effects from environmental exposures to PCDDs.

L9 ANSWER 11 OF 13 LIFESCI COPYRIGHT 2006 CSA on STN
ACCESSION NUMBER: 96:101207 LIFESCI
TITLE: Antioxidant defences against reactive oxygen species causing genetic and other damage
AUTHOR: Anderson, D.
CORPORATE SOURCE: BIBRA Intl., Woodmansterne Rd., Carshalton, Surrey, SM5 4DS, UK
SOURCE: MUTAT. RES. - FUNDAM. MOL. MECH. MUTAGEN., (1996) vol. 350, no. 1, pp. 103-108. Special Issue: Mechanisms of Antimutagenesis and Carcinogenesis..
ISSN: 0027-5107.
DOCUMENT TYPE: Journal
FILE SEGMENT: G
LANGUAGE: English
SUMMARY LANGUAGE: English
AB Oxygen, present as 20% of the atmosphere, is a terminal oxidant essential for respiration and other oxidative reactions in all aerobic organisms. During the reduction of molecular oxygen, reactive oxygen species are formed. These free radicals are implicated in many diseases including atherosclerosis, respiratory tract disorders, neurodegenerative disease, inflammatory bowel disease, **cancer** and also in ageing. A free radical is any atom or molecule that contains one or more unpaired electrons. The unpaired electrons alter the chemical reactivity of an atom or molecule, usually making it more reactive than the corresponding non-radical. The chemical reactivity of radicals varies enormously. The hydrogen radical (H super(*)) containing one proton and one electron is the simplest free radical. By the removal of (H super(*)) from other molecules, chain reactions are often initiated e.g. during lipid peroxidation. In the human body, solar radiation or low wavelength electromagnetic radiation, such as gamma-rays, from the **environment** can split water to generate the hydroxyl radical, OH, which is very reactive at the site of formation. The body also makes another oxygen radical where the unpaired electron is located on oxygen, superoxide (O sub(2) super(*-)), but this is poorly reactive. Active phagocytes including neutrophils, monocytes, macrophages and eosinophils, generate large amounts of superoxide in the killing of foreign organisms. However, with chronic inflammation this normal protective mechanism may

itself be damaging. Another physiological free radical is nitric oxide (NO) which is made by the vascular endothelium as a relaxing factor, but excessive nitric oxide can be toxic. Superoxide can react with iron and **copper** ions to make hydroxyl radicals or can combine with nitric oxide O sub(2) super(*-) + NO arrow right ONOO super(-) (peroxynitrite). This decomposes into toxic products including nitrogen dioxide gas (NO sub(2)), hydroxyl radical and nitronium ion NO sub(2) super(+).

L9 ANSWER 12 OF 13 LIFESCI COPYRIGHT 2006 CSA on STN
ACCESSION NUMBER: 95:51851 LIFESCI
TITLE: Role of **copper** accumulation and metallothionein induction in spontaneous liver **cancer** development in LEC rats
AUTHOR: Sawaki, M.; Enomoto, K.; Hattori, A.; Tsuzuki, N.; Sugawara, N.; Mori, M.
CORPORATE SOURCE: Dep. Pathol., Sch. Med., Sapporo Med. Univ., South 1, West 17, Chuo-Ku, Sapporo 060, Japan
SOURCE: CARCINOGENESIS, (1994) vol. 15, no. 9, pp. 1833-1837. ISSN: 0143-3334.
DOCUMENT TYPE: Journal
FILE SEGMENT: X
LANGUAGE: English
SUMMARY LANGUAGE: English
AB The LEC rat spontaneously develops liver **cancer** after suffering chronic liver injury caused by abnormal **copper** accumulation in the liver, but the role of **copper** accumulation in the induction of liver **cancer** remains obscure. We histochemically and biochemically examined the content of **copper** and metallothionein (MT), a cytoplasmic **copper** binding protein, in spontaneously developed preneoplastic and neoplastic liver lesions and compared them with those in the surrounding liver tissues. Histochemically, the majority of the preneoplastic liver lesions (68%) and liver **cancers** (59%) showed lower **copper** contents than the surrounding liver tissues and no lesions were shown to accumulate more **copper** than the surrounding tissues. A marked heterogeneity in **copper** staining was observed in **cancer** tissues. In contrast, these lesions showed an equal to higher MT content than their surroundings. Biochemical measurements of **copper** and MT in **cancer** tissues supported the histochemical findings. The bromodeoxyuridine (BrdU) labeling index was high in all **cancer** tissues and some of the preneoplastic liver lesions. Parts of the **cancer** tissues with negative or weak staining for **copper** were highly labeled with BrdU. Taking these results together, **copper** accumulation may exert a growth inhibitory effect on surrounding hepatocytes, whereas the hepatocytes in the liver lesions could proliferate, escaping from the effect of **copper** toxicity by increasing their MT induction and lowering **copper** accumulation. Thus, accumulation of **copper** may act as a promoting factor for the development of liver **cancer** in LEC rats by creating a selective growth **environment**.

L9 ANSWER 13 OF 13 BIOTECHNO COPYRIGHT 2006 Elsevier Science B.V. on STN
ACCESSION NUMBER: 1985:16236138 BIOTECHNO
TITLE: Depletion of extracellular cysteine with hydroxocobalamin and ascorbate in experimental murine **cancer** chemotherapy
AUTHOR: Pierson H.F.; Fisher J.M.; Rabinovitz M.
CORPORATE SOURCE: Laboratory of Pharmacology and Experimental Therapeutics, Division of Cancer Treatment, National Cancer Institute, NIH, Bethesda, MD 20205, United States.
SOURCE: Cancer Research, (1985), 45/10 (4727-4731) CODEN: CNREA8
DOCUMENT TYPE: Journal; Article
COUNTRY: United States
LANGUAGE: English
AN 1985:16236138 BIOTECHNO
AB Treatment of mice bearing P388 lymphocytic leukemia with combined hydroxocobalamin (0.1 mmol/kg) and sodium ascorbate (1.0 mmol/kg) for 10

consecutive days resulted in 70% increase in survival. Treatment with dehydroascorbate (1.0 mmol/kg) similarly increased survival. The extended treatment for 15 days posttumor inoculation failed to improve survival as did lowering the tumor inocula from 10.sup.6 to 10.sup.4 cells in similarly treated mice. P388 cells in primary culture with cystine as a source of cysteine require exogenous thiols or disulfides for growth and also grow with cysteine but only when trace **copper** is sequestered with bathocuproine sulfonate. This is due to the **copper** catalyzed oxidation of cysteine to cystine, which these cells cannot utilize. Cells grew in medium preincubated for 8 h with cysteine and bathocuproine sulfonate, but lysed when the preincubated medium included hydroxocobalamin (10 μM) and sodium ascorbate (100 μM). This defect was corrected by resupplementation with cysteine or cystine plus bishydroxyethyl disulfide after addition of the cells. Further support for cysteine depletion as a factor in therapy is obtained by therapeutic interference with 4-thiamethionine (25 μmol/kg). This mixed disulfide of cysteine and methyl mercaptan enters cells as a methionine analogue, is reduced to supply cysteine, and thus withstands the oxidative **environment** that limits the utilization of cysteine as a nutrient. These results suggest that dehydroascorbate is generated from combined hydroxocobalamin and ascorbate and accounts for the thiol-prive activity of combined hydroxocobalamin and ascorbate therapy. The ultimate failure of therapy by thiol oxidation may be due to the increased availability of cysteine produced by host tissues, possibly infiltrating macrophages, that occurs independently of extended treatment and the size of the tumor inoculum.

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=> copper and pollution and environment
L10          59 FILE AGRICOLA
L11         218 FILE BIOTECHNO
L12           0 FILE CONFSCI
L13          51 FILE HEALSAFE
L14           0 FILE IMSDRUGCONF
L15         542 FILE LIFESCI
L16        2143 FILE PASCAL

TOTAL FOR ALL FILES
L17        3013 COPPER AND POLLUTION AND ENVIRONMENT

=> copper(10A)pollution(15A)environment
L18           6 FILE AGRICOLA
L19           1 FILE BIOTECHNO
L20           0 FILE CONFSCI
L21           0 FILE HEALSAFE
L22           0 FILE IMSDRUGCONF
L23           2 FILE LIFESCI
L24           4 FILE PASCAL

TOTAL FOR ALL FILES
L25          13 COPPER(10A) POLLUTION(15A) ENVIRONMENT

=> dup rem
ENTER L# LIST OR (END):l25
DUPLICATE IS NOT AVAILABLE IN 'IMSDRUGCONF'.
ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIQUE
PROCESSING COMPLETED FOR L25
L26           10 DUP REM L25 (3 DUPLICATES REMOVED)

=> d l26 ibib abs total

L26  ANSWER 1 OF 10  LIFESCI    COPYRIGHT 2006 CSA on STN
ACCESSION NUMBER:   2003:10527  LIFESCI
TITLE:              Direct and indirect effects of repeated pollution events on
                    marine hard-substrate assemblages
AUTHOR:             Johnston, E.L.; Keough, M.J.
CORPORATE SOURCE:   Department of Zoology, University of Melbourne, Melbourne,
                    Victoria, 3010 Australia
SOURCE:             Ecological Applications [Ecol. Appl.], (20020800) vol. 12,
```

no. 4, pp. 1212-1228.
ISSN: 1051-0761.
DOCUMENT TYPE: Journal
FILE SEGMENT: D
LANGUAGE: English
SUMMARY LANGUAGE: English
AB Testing the effects on organisms of a constant exposure to toxicants in uniform environments is unlikely to reflect accurately the majority of toxicant exposures in the field, and environmental managers need tools to help predict impacts especially of pulse toxicant inputs into highly variable natural **environments**. We investigated the effect of pulse **copper pollution** events on the development of sessile marine invertebrate assemblages at two sites in Port Phillip Bay, Victoria, Australia. Using a field dosing technique we created localized 2-d copper pollution events close to settlement plates. Pulses were delivered every 2, 4, 8, or 16 wk for the duration of the 16-wk experiments, and the assemblages allowed to develop under these dosing regimes. Pulse pollution events dramatically altered the assemblages at both sites predominantly through a direct negative effect on the densities of large space-occupying tunicates. Most other taxonomic groups responded positively to multiple copper pulses, which was considered a density-mediated indirect effect of the toxicant. In particular, organisms known to be good colonizers but poor competitors for space such as serpulid polychaetes occurred in densities an order of magnitude higher on plates exposed to copper pulses. The responses of the assemblages were predominantly independent of the frequency of pulse pollution events, although a single pulse exposure at the beginning of the experiment had no observable effect when censused at week 16. The impact of these transient pollution events were manifest as changes in the structure of invertebrate assemblages and could persist for some time after the agent of disturbance was removed. The effects of a single pulse copper pollution event on an established (8-wk-old) assemblage were evident for at least a further 8 wk after it occurred.

L26 ANSWER 2 OF 10 BIOTECHNO COPYRIGHT 2006 Elsevier Science B.V. on STN
DUPLICATE
ACCESSION NUMBER: 2002:35112832 BIOTECHNO
TITLE: Diffuse emission and control of copper in urban surface runoff
AUTHOR: Boller M.A.; Steiner M.
CORPORATE SOURCE: M.A. Boller, EAWAG, Swiss Fed. Inst. for Environ. Sci., Ueberlandstrasse 109, CH-8600 Duebendorf, Switzerland.
SOURCE: Water Science and Technology, (2002), 46/6-7 (173-181), 23 reference(s)
CODEN: WSTED4 ISSN: 0273-1223
DOCUMENT TYPE: Journal; Conference Article
COUNTRY: United Kingdom
LANGUAGE: English
SUMMARY LANGUAGE: English
AN 2002:35112832 BIOTECHNO
AB Copper washed off from roofs and roads is considered to be a major contribution to diffuse **copper pollution** of urban **environments**. In order to guarantee sustainable protection of soils and water, the long-term strategy is to avoid or replace copper containing materials on roofs and facades. Until achievement of this goal, a special adsorber system is suggested to control the diffuse copper fluxes by retention of copper by a mixture of granulated iron-hydroxide (GEH) and calcium carbonate. Since future stormwater runoff concepts are based on decentralised runoff infiltration into the underground, solutions are proposed which provide for copper retention in infiltration sites using GEH adsorption layers. The example of a large copper facade of which runoff is treated in an adsorption trench reveals the first full-scale data on facade runoff and adsorber performance. During the first year of investigation average facade runoff concentrations in the range of 1-10 mg Cu/l are reduced by 96-99% in the adsorption ditch.

L26 ANSWER 3 OF 10 PASCAL